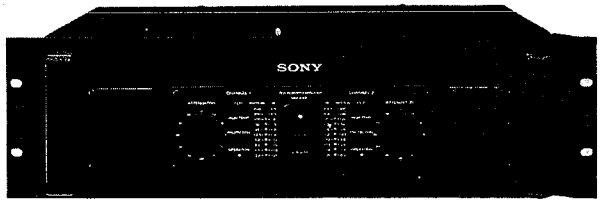
MU-A200/A400

SERVICE MANUAL

AEP Model

MU-A200



MU-A400

SPECIFICATIONS

Channel 2 channels
Input sensitivity 0dBs (100W +100W, 8 ohm load impedance, both channels driven simultaneously)

Input	Balanced	Unbalanced
Circuit	Electronic balanced circuit	
Input impedance	More than 33 kilo-ohms (stereo operation) More than 33 kilo-ohms (monaural operation)	
Connector and jack	XLR-3-31 type	XLR-3-31 type Phono type

Item	Stereo	Monaural (BTL)
Output terminal	Screw type binding terminal	
Rated output*	MU-A400	
	260 W + 260 W (8 ohms) 400 W + 400 W (4 ohms) (both channels driven simultaneously)	520 W (16 ohms) 800 W (8 ohms)
	MU-A200	
	130 W + 130 W (8 ohms) 200 W + 200 W (4 ohms) (both channels driven simultaneously)	260 W (16 ohms) 400 W (8 ohms)
Power bandwidth	20 Hz - 20 kHz ± 0.5 dB	
Damping factor	More than 150 (8 ohms, 1kHz)	—
Harmonic distortion	Less than 0.1 % (8 ohms, at 100 W output)	Less than 0.1 % (8 ohms, at 200 W output)
Channel separation	More than 70 dB (1kHz: 8 ohms load, at rated output)	—
Residual noise	Less than 100 µV (IHF-A, input terminated)	Less than 200 µV (IHF-A, input terminated)
Gain (max.)	31 dB	37 dB
Stacking output connector	XLR-3-32 type	

0 dBs= 0.775 V
*1 % harmonic distortion at 1kHz

Indicator 10-point LED level meter
PROTECTION indicator
HIGH TEMP indicator
CLIP indicator
POWER indicator
Power requirements 220 - 240 V AC, 50/60 Hz
Power consumption MU-A400: 805 W
MU-A200: 425 W
Dimensions MU-A400:
Approx. 482 x 146 x 490 mm (w/h/d)
(19 x 4 3/4 x 19 3/8 inches)
MU-A200:
Approx. 482 x 102 x 490 mm (w/h/d)
(19 x 4 1/8 x 19 3/8 inches)
Weight MU-A400: Approx. 20.5 kg (45 lbs 2 oz)
MU-A200: Approx. 15 kg (33 lbs 2 oz)
Accessories supplied AC power cord (1)
Fuse MU-A400: 8A (1)
MU-A200: 4A (1)

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Design and specifications are subject to change without notice.

TECHNICAL DEPT. SEC.	
don't remove please	
S/M	
SE	
KEY	
SPEC	

PROFESSIONAL POWER AMPLIFIER

SONY®

MICROFILM

TABLE OF CONTENTS

Section *Title* *Page*

SPECIFICATIONS 1

1. GENERAL
Precautions 3
Dimensions 3
Location and Function of Controls 4
Connection Examples 6

2. ADJUSTMENTS 7

3. DIAGRAMS
3-1. Block Diagram 8
3-2. Circuit Board Location 8
3-3. Semiconductor Lead Layouts 9
3-4. Printed Wiring Boards – PRE AMP Section – (MU-A200/A400 : Identical) 11
3-5. Schematic Diagram – PRE AMP Section – (MU-A200/A400 : Identical) 13
3-6. Printed Wiring Boards – MAIN AMP Section – (MU-A200/A400 : Common) 16
3-7. Schematic Diagram – MAIN AMP Section – (MU-A200) 19
3-8. Printed Wiring Boards – MAIN AMP Section – (MU-A200/A400 : Common) 22
3-9. Schematic Diagram – MAIN AMP Section – (MU-A400) 25

4. EXPLODED VIEWS
4-1. Outer External Section 28
4-2. Main Section 29
4-3. Front Panel Section 30
4-4. Main Chassis Section 31
4-5. Back Panel Section 32

5. ELECTRICAL PARTS LIST 33

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM
THIS APPARATUS MUST BE EARTHED

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:
Green-and-yellow: Earth
Blue: Neutral
Brown: Live
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

3136

SECTION 1
GENERAL

This section is extracted from instruction manual.

Precautions

On Installation

Avoid installing or leaving the unit in a location:

- near heat sources such as radiators, airducts or heaters
- subject to direct sunlight
- exposed to rain or moisture
- where it is unventilated
- exposed to excess dust or dirt
- subject to mechanical vibration or shock

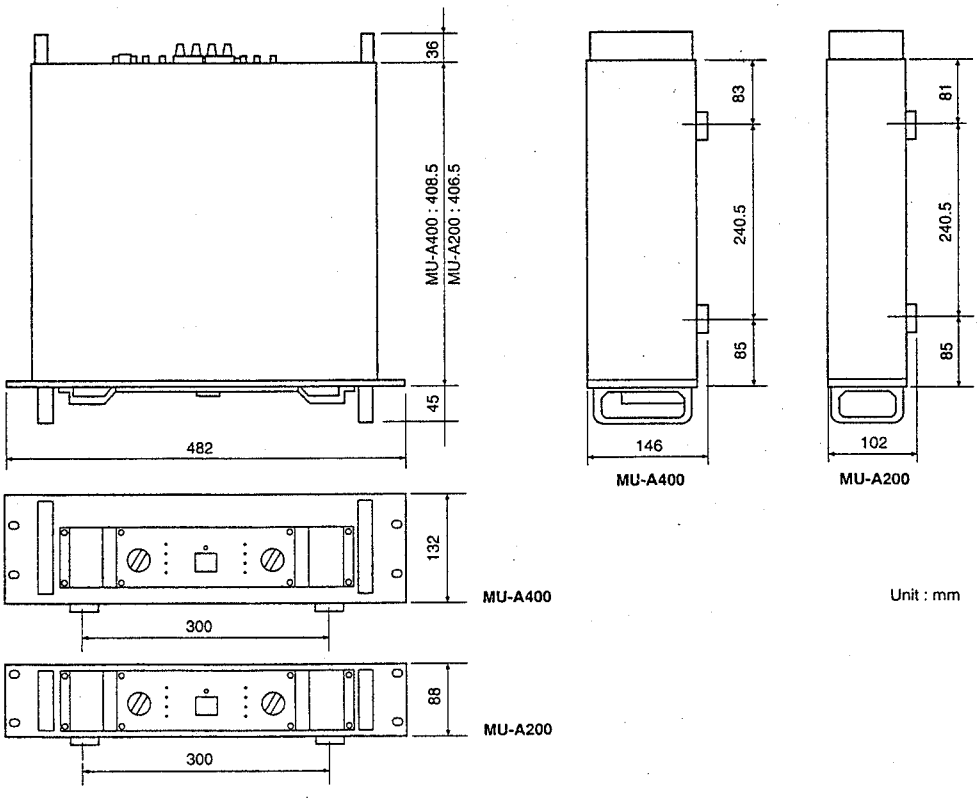
On Operation

- Operate the unit only on 220-240 V AC, 50/60 Hz.
- Unplug the unit from the wall outlet when it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never take out the plug by pulling on the cord.
- Should any solid object or liquid fall into the component, unplug the unit and have it checked by qualified personnel before using it again.
- Clean the cabinet, panel and knobs periodically using a soft cloth moistened with a mild detergent. Never use an abrasive cleanser or chemical solvents as they may mar the finish.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

3

Dimensions

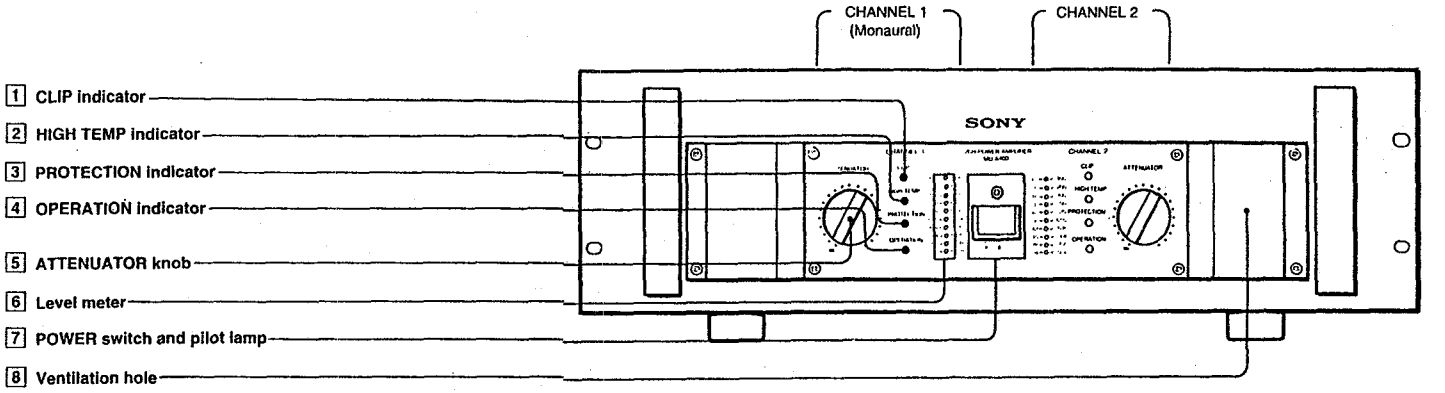


Unit : mm

5

Location and Function of Controls

Front Panel



CHANNEL 1 and CHANNEL 2 have the same function.

1 CLIP indicator (red)
Lights when the output wave is distorted. When the indicator lights frequently, the input level is too high or there is a problem in the input channel.

2 HIGH TEMP(temperature) indicator (red)
Lights when the temperature of the heat sink becomes too high. Take a measure to be well ventilated.

3 PROTECTION indicator (red)
Lights when the protection circuit is working. When you turn on the amplifier, the indicator lights but goes off when the unit starts to work steadily.

4 OPERATION indicator (green)
Shows the operation mode set by the position of the OPERATION switch on the rear panel.

Position of the OPERATION switch	OPERATION indicator		Operation mode
	CHANNEL 1	CHANNEL 2	
STEREO	Lights	Lights	Stereo
SAME OUT	Lights	Lights	CHANNEL 2 has the same signal as CHANNEL 1. (monaural)
MONO	Lights	Out	Monaural through BTL

5 ATTENUATOR knob
CHANNEL 1 (MONO): Turn this knob to control the channel 1 input level. You can control the input level with this knob when you are using the unit as a monaural amplifier through BTL.
CHANNEL 2: Turn this knob to control the channel 2 input level. When you set the OPERATION switch on the rear panel to MONO, this knob does not function.

Note
When you set the OPERATION switch on the rear panel to SAME OUT, CHANNEL 1 and CHANNEL 2 are connected (stacking connection). You can control the channel 1 input level with the ATTENUATOR knob on the CHANNEL 1 side, and the channel 2 input level with the ATTENUATOR knob on the CHANNEL 2 side.

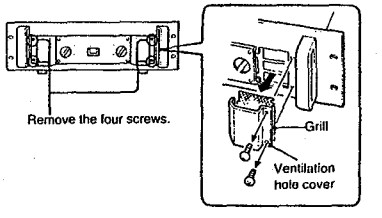
6 Level meter
The 10-point LED level meter shows 0dB at 8 ohms load, 100 W output.

7 POWER switch and pilot lamp (green)
Press this switch to turn on the amplifier. The pilot lamp lights when the unit is turned on.

8 Ventilation hole
Two ventilation holes with a fan are located on both sides of the front panel. The holes are covered with a grill and a cover. When the grills become dusty, the fans do not work properly and the HIGH TEMP indicator starts to light frequently. In this case, remove the ventilation hole cover and clean the grill. Unplug the AC power cord before cleaning the grill.

Caution
Do not touch the interior of the unit when you remove the grill.

To remove the ventilation hole cover

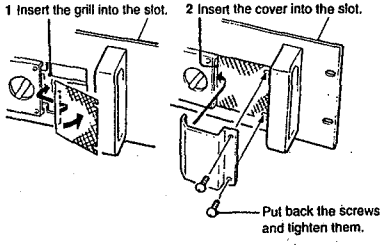


Notes on the PROTECTION lamp

When does the PROTECTION lamp light?
The PROTECTION lamp lights when the protection circuit functions to protect the speakers and the amplifier by cutting off the output in the following cases:
- when DC (direct current) runs through the OUTPUT connectors because of a malfunction of the amplifier.
- when the radiator located in the amplifier exceeds the normal temperature (the HIGH TEMP indicator lights continuously).
- when the impedance of the speaker is too low, or when the output is terminated.

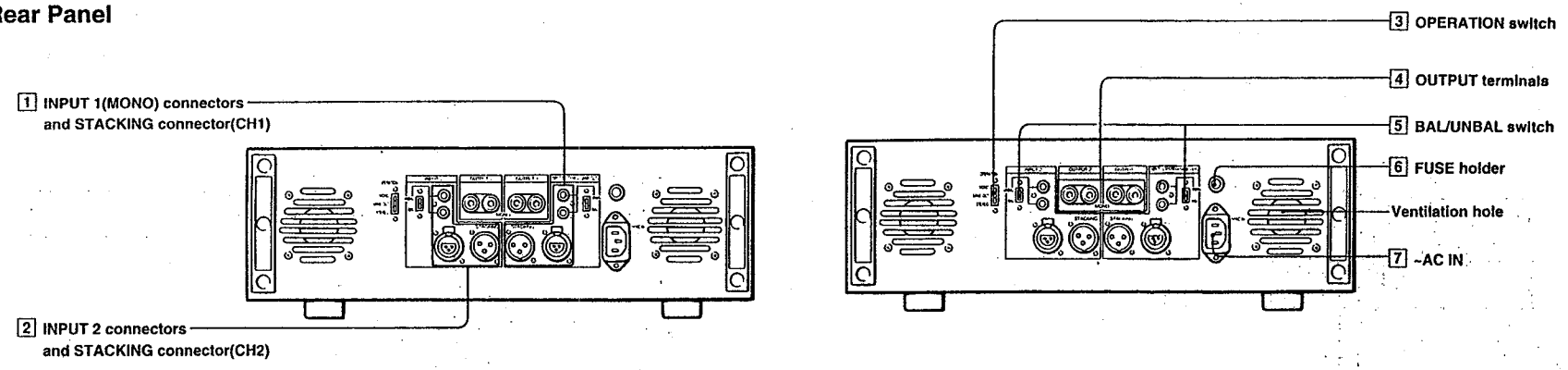
In these cases, turn off the POWER switch, find the cause and resolve the problem. Then turn on the POWER switch to operate the amplifier.

To put back the grill and the cover



Location and Function of Controls

Rear Panel



1 INPUT(MONO) (input 1, monaural) and STACKING connectors
Connect outputs of a mixer or preamplifier.
When you are using the unit as a stereo amplifier, these input connectors are for CHANNEL 1. When you set the OPERATION switch to SAME OUT or MONO, these connectors accept monaural input signals.

INPUT connector (XLR-3-31 type): Accepts balanced input when you set the BAL/UNBAL switch to BAL. When you set the switch to UNBAL, the connector accepts unbalanced input (Number 2: HOT).

INPUT jacks (phono type, unbalanced): Accept unbalanced signals when you set the BAL/UNBAL switch to UNBAL. Use one jack for input, another to connect another amplifier for stacking connection.

STACKING connector (XLR-3-32 type): Feeds out the signal which is received from the XLR type INPUT connector. Use this connector to connect another amplifier for stacking connection.

2 INPUT (input 2) and STACKING connectors
Connect outputs of a mixer or preamplifier.
When you are using the unit as a stereo amplifier, these input connectors are for CHANNEL 2. When you set the OPERATION switch to SAME OUT or MONO, these connectors are disconnected.

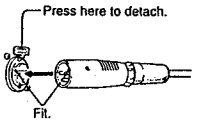
INPUT connector (XLR-3-31 type): Accepts balanced input when you set the BAL/UNBAL switch to BAL. When you set the switch to UNBAL, the connector accepts unbalanced input (Number 2: HOT).

INPUT jacks (phono type, unbalanced): Accept unbalanced signals when you set the BAL/UNBAL switch to UNBAL. Use one jack for input, another to connect another amplifier for stacking connection.

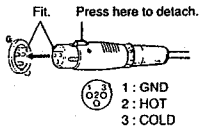
STACKING connector (XLR-3-32 type): Feeds out the signal which is received from the XLR type INPUT connector. Use this connector to connect another amplifier for stacking connection.

BAL/UNBAL switch	INPUT 1 (MONO) /INPUT 2 connectors	
BAL	XLR type connector	
	1 : GND 2 : HOT 3 : COLD	1 : GND 2 : HOT 3 : GND
UNBAL	Phono type jack	

XLR-3-12C type



XLR-3-11C type



3 OPERATION switch
Changes the operation mode of the unit as follows.

OPERATION switch	Operation mode
STEREO	Stereo
SAME OUT	Internal stacking operation CHANNEL 2 has the same signal as the CHANNEL 1 input signal.
BTL	Monaural operation through BTL.

Select the position of this switch when the POWER switch is turned off.

4 OUTPUT terminals
Connect speakers. Connect the + speaker terminal to the red terminal, – speaker terminal to the black terminal.
When the unit is on monaural operation through BTL, use only the red terminals. Connect the + speaker terminal to the red terminal on the OUTPUT 1 side, – speaker terminal to the red terminal on the OUTPUT 2 side.

Rack Mounting

By using the mounting parts on both sides, you can install the unit in an EIA standard 19-inch rack.
If you install various pieces of equipment one upon another, remove the unit's bottom support. To remove, pull out the screws of the supports, by using a screwdriver.

5 BAL/UNBAL (balanced/unbalanced) switch
When you set the switch to BAL, the unit feeds in the input signal from the source connected to the XLR type INPUT connector.
When you set the switch to UNBAL, the unit feeds in the input signal from the source connected to the XLR type INPUT connector* or to the phono type INPUT jacks.
You can make a stacking connection with another amplifier since these input connectors are in parallel connection.
* In this case, the XLR type INPUT connector accepts unbalanced input (Number 2: HOT).

6 FUSE holder
There is a fuse to prevent damage from excessive current. Current capacity is 8A for the MU-A400 and 4A for the MU-A200. When you replace the fuse, be sure to use one with the same capacity.

7 ~AC IN (inlet)
Connect the AC power cord supplied. The unit operates on 220-240V AC, 50/60 Hz.

Connection Examples

Connection Notes

On power sources

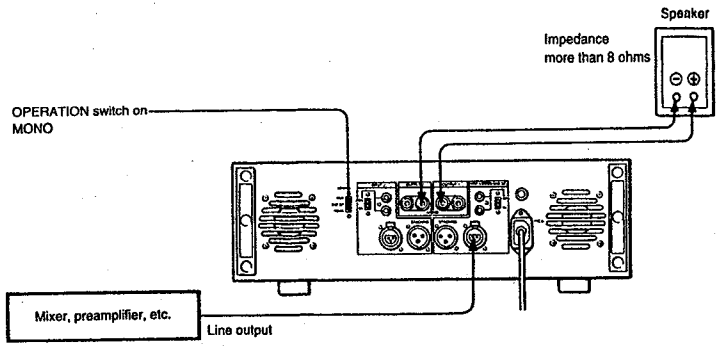
To avoid damaging the unit or to prevent the circuit breaker from working accidentally:

- Use an extension cord that can bear 10A current.
- Do not connect many pieces of equipment to the same AC outlet.

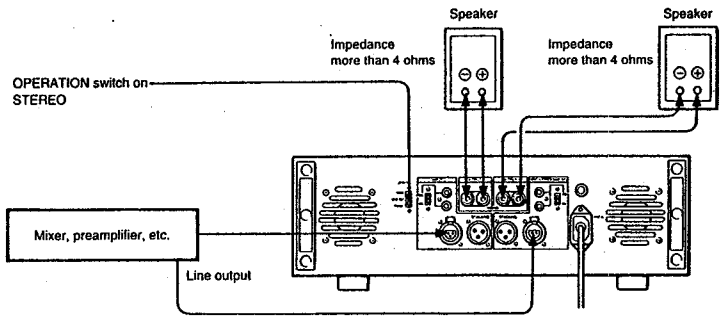
On connecting cables

- The power cord should be connected last. First make sure that the POWER switch is turned off.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- Unplug the cord from the wall outlet by grasping the plug. Never take out the plug by pulling on the cord.

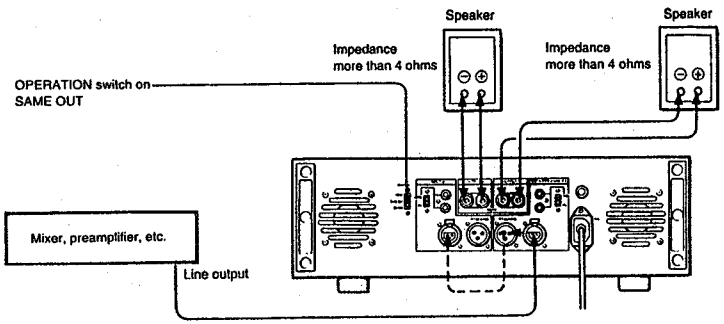
Using the Unit as a Monaural Amplifier through BTL



Using the Unit as a Stereo Amplifier



Using the Unit with Internal Stacking Connections



SECTION 2
ADJUSTMENTS

[Preparation]

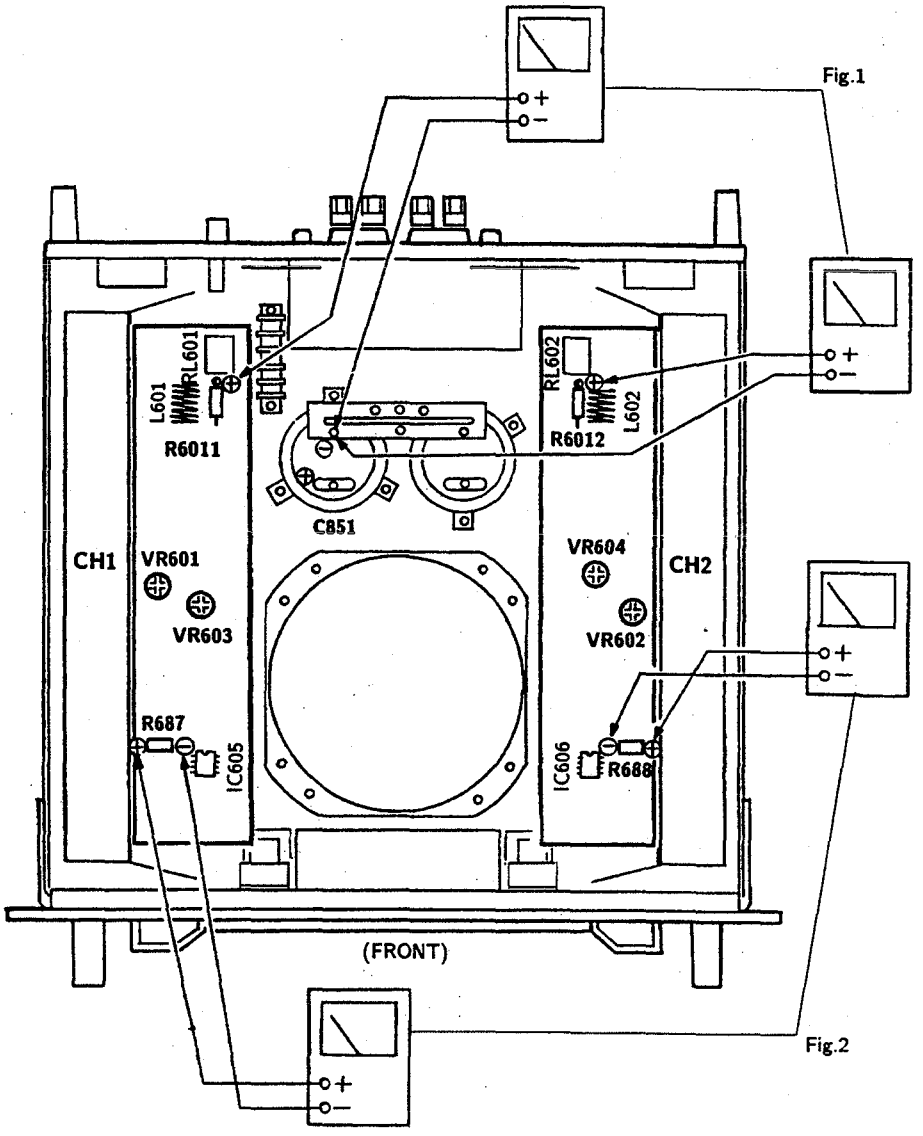
1. Turn the semi-final resistors from VR601 to VR604 and set at the mechanical center position.
2. The following adjustment must be done a five minutes passed after the power on.

[Offset Adujustment]

1. Connect the multi-voltage meter to the resistor R6011 (or R6012) and minus terminal of C851 at none signal input condition as shown in fig.1.
2. Adjust the semi-final resistor VR603(or VR604) to zero volt.

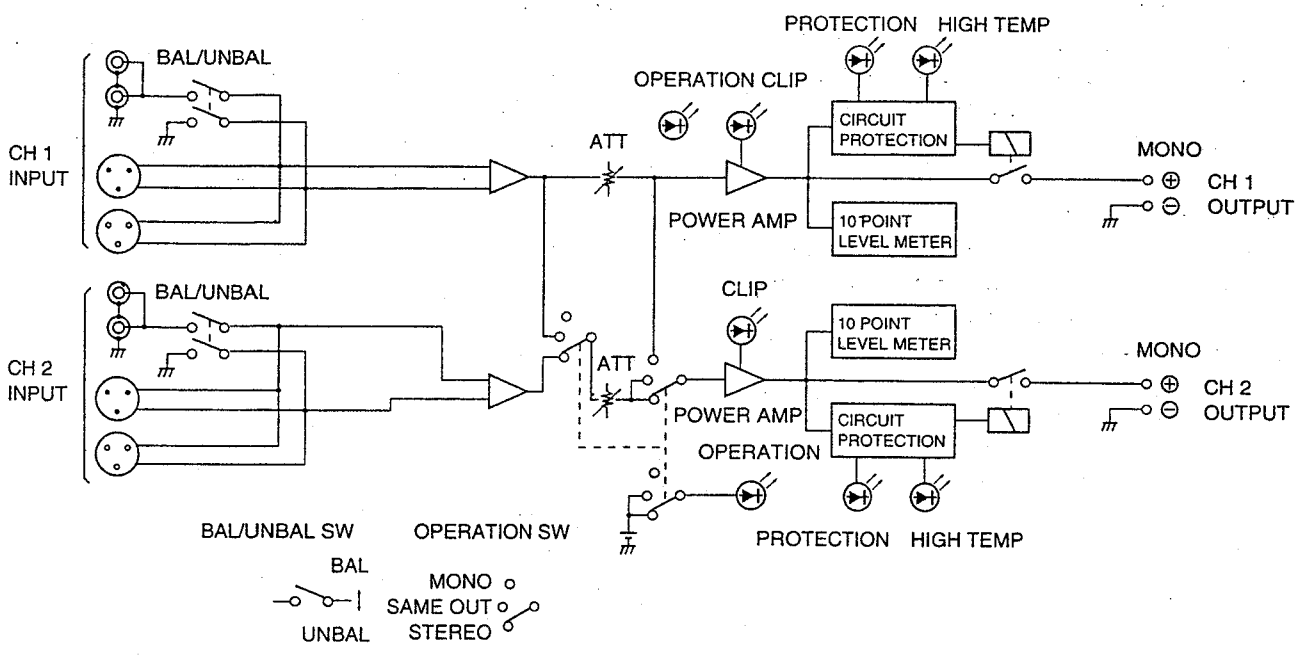
[Bias Adjustment]

1. Connect the multi-voltage meter to the both side of the resistor R687(or R688) at none signal input condition as shown in fig.2.
2. Adjust the semi-final resistor VR601(or VR602) and set the bias voltage from 2 to 5 mV.

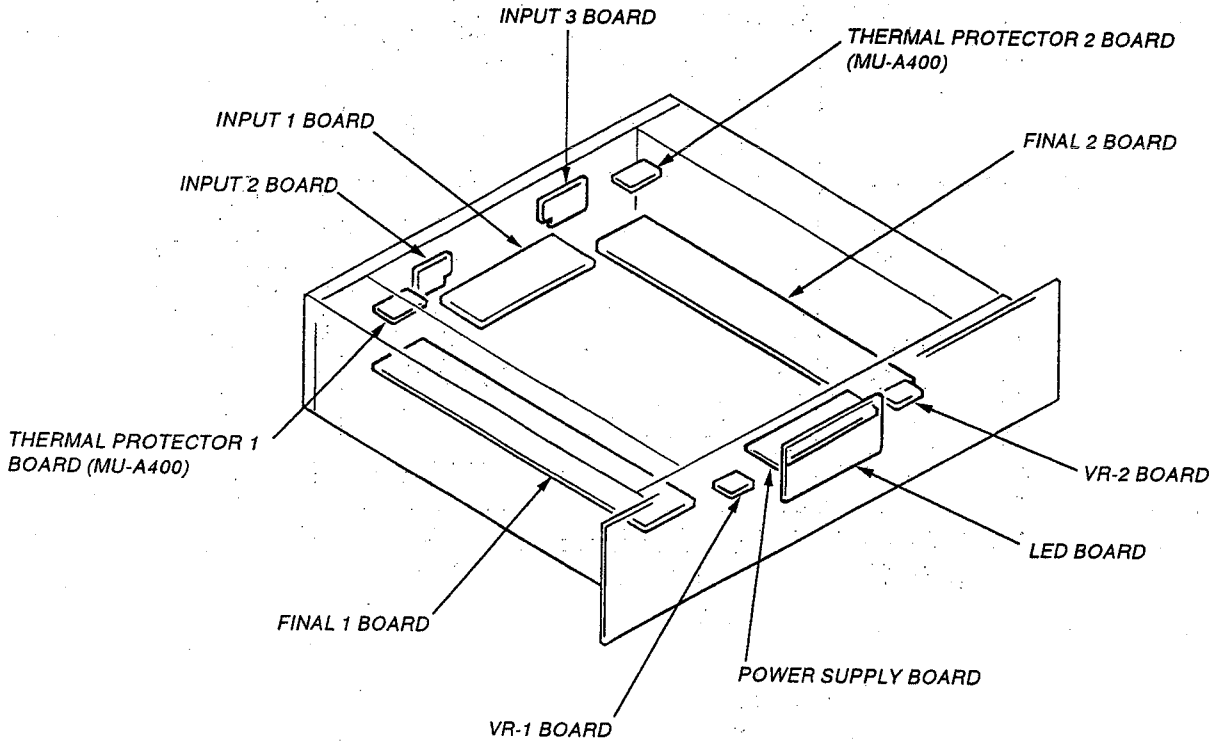


SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM



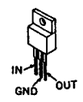
3-2. CIRCUIT BOARD LOCATION



3-3. SEMICONDUCTOR LEAD LAYOUTS
(MU-A200/A400 : Common)

M5220P
NJM2904-D

NJM7824FA
RC7812FA

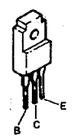


μ PC1237HA

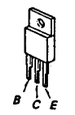
DTC124ES

2SA1174

2SA1306B-Y
2SC3298B-Y

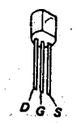


2SA1383
2SC3514



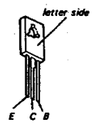
2SA1492-Y
2SC3856M-OPY

2SA953-LA
2SC2002-L



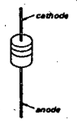
2SC3999-L

2SD1189

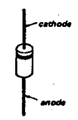


RD24FB1

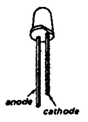
1SR139-400



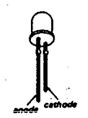
1SS83



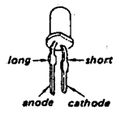
AA3422S



SEL3410G



TLR123



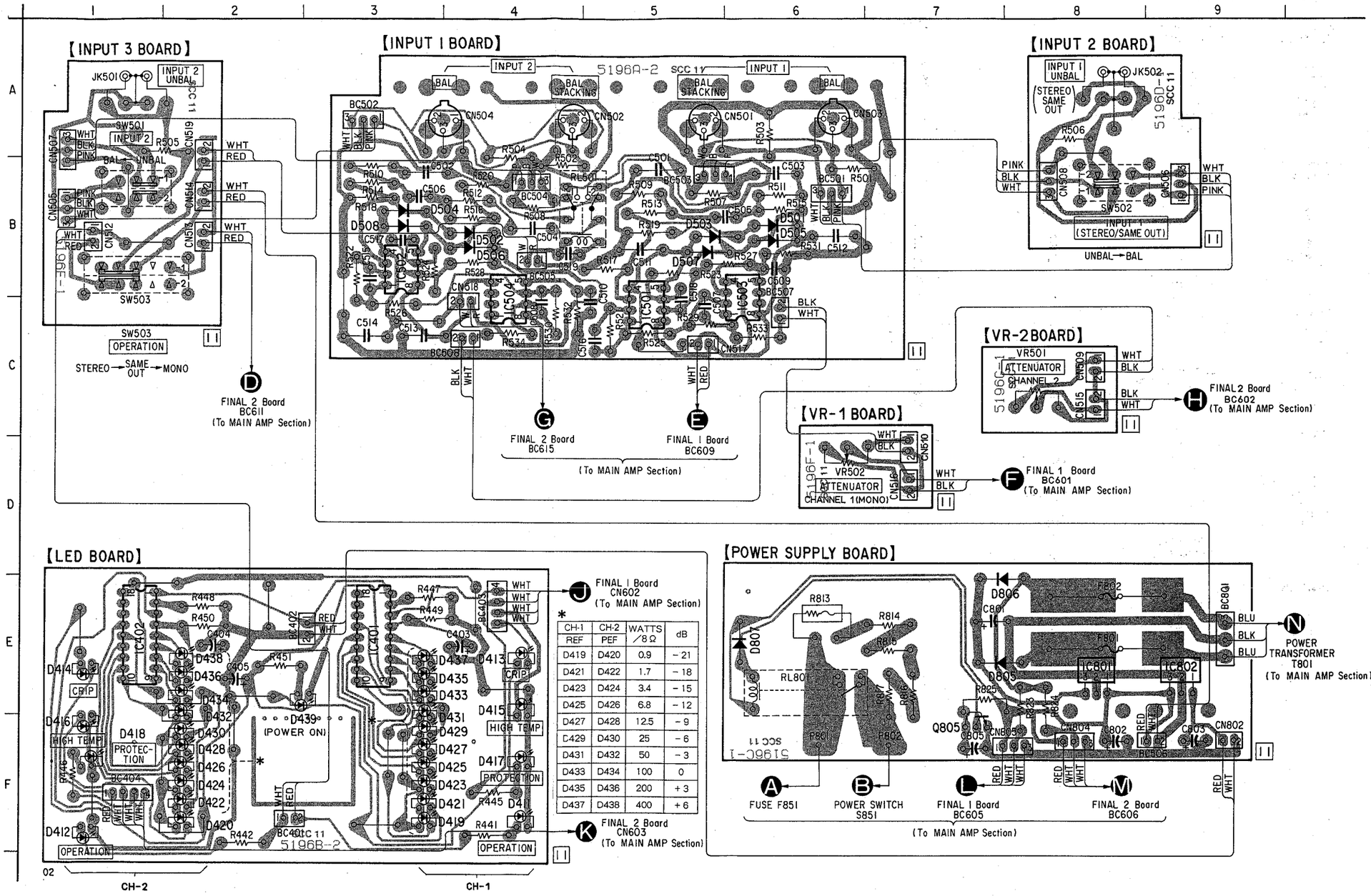
• SEMICONDUCTOR LOCATION

Ref. No	Location
D411	F-4
D412	F-1
D413	E-4
D414	E-1
D415	E-4
D416	F-1
D417	F-4
D418	F-1
D419	F-3
D420	F-2
D421	F-3
D422	F-2
D423	F-3
D424	F-2
D425	F-3
D426	F-2
D427	F-3
D428	F-2
D429	F-3
D430	F-2
D431	E-3
D432	E-2
D433	E-3
D434	E-2
D435	E-3
D436	E-2
D437	E-3
D438	E-2
D439	E-2
D501	B-6
D502	B-4
D503	B-5
D504	B-3
D505	B-6
D506	B-4
D507	B-5
D508	B-3
D805	E-7
D806	E-7
D807	E-6
IC401	E-3
IC402	E-1
IC501	C-5
IC502	B-3
IC503	B-6
IC504	B-4
IC801	E-8
IC802	E-9
Q805	F-7

3-4. PRINTED WIRING BOARDS – PRE AMP SECTION – (MU-A200/A400 : Identical)

(Conductor side)

• Refer to page 9 for Semiconductor Lead Layouts.


【INPUT 3 BOARD】
【INPUT 1 BOARD】
【INPUT 2 BOARD】
【VR-2BOARD】
【VR-1 BOARD】
【LED BOARD】
【POWER SUPPLY BOARD】
SW503 OPERATION
STEREO → SAME OUT → MONO
FINAL 2 Board BC611 (To MAIN AMP Section)
FINAL 2 Board BC615
FINAL 1 Board BC609
(To MAIN AMP Section)
UNBAL → BAL
FINAL 2 Board BC602 (To MAIN AMP Section)
FINAL 1 Board BC601 (To MAIN AMP Section)
FINAL 1 Board CN602 (To MAIN AMP Section)
FINAL 2 Board CN603 (To MAIN AMP Section)
FUSE F851
POWER SWITCH S851
FINAL 1 Board BC605
FINAL 2 Board BC606
(To MAIN AMP Section)
POWER TRANSFORMER T801 (To MAIN AMP Section)
CH-2
CH-1

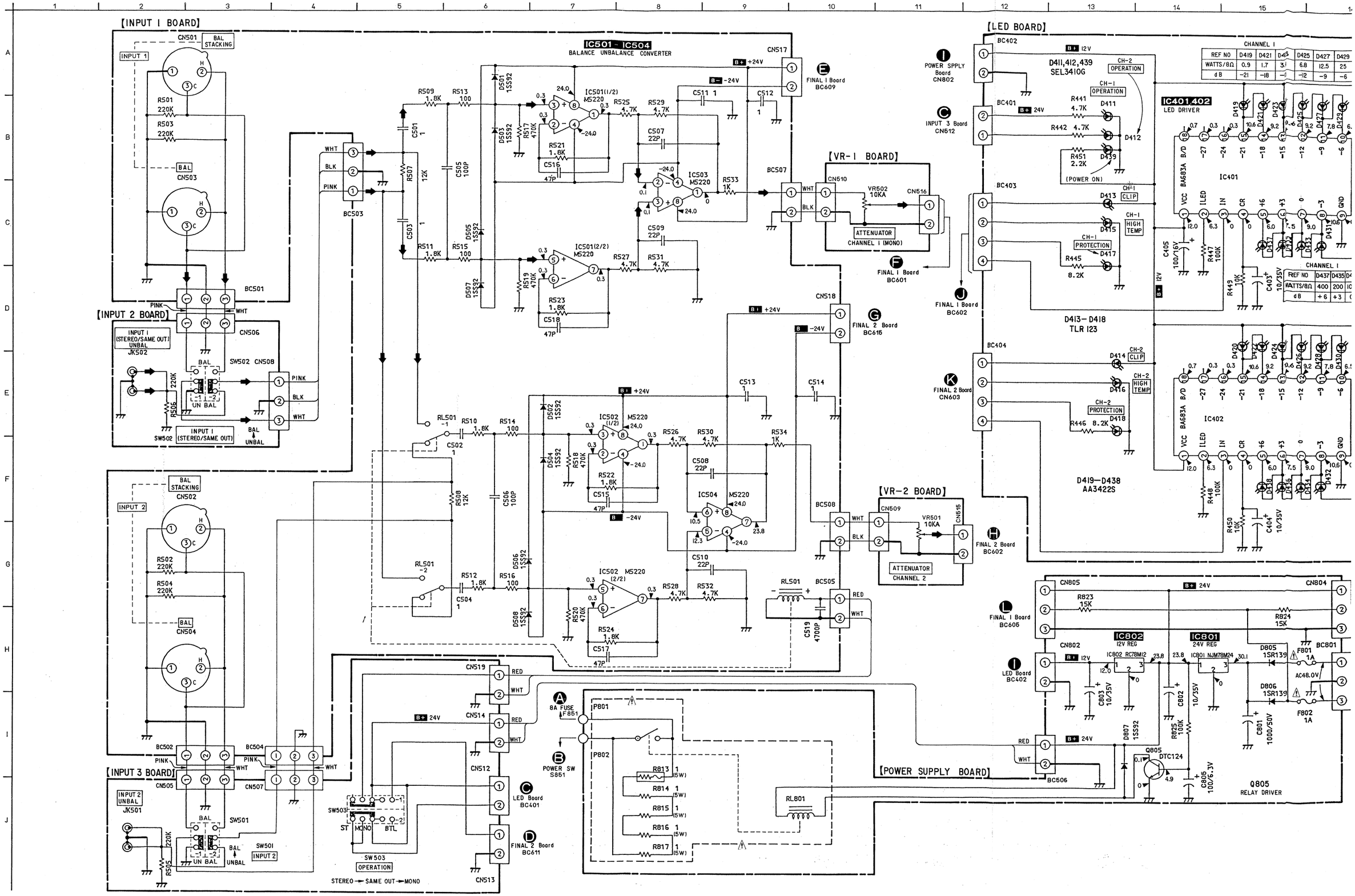
*

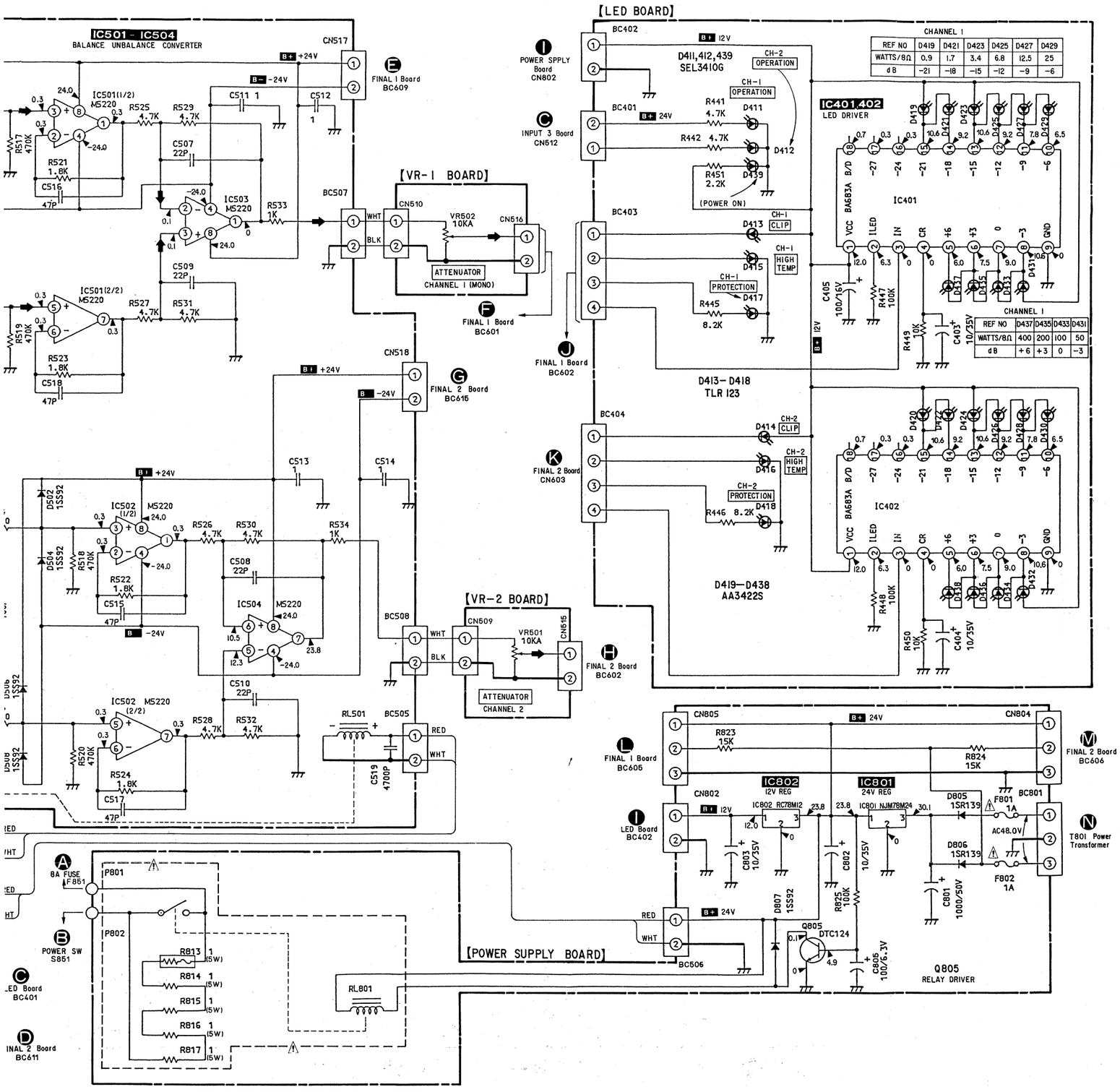
CH-1 REF	CH-2 PEF	WATTS /8Ω	dB
D419	D420	0.9	– 21
D421	D422	1.7	– 18
D423	D424	3.4	– 15
D425	D426	6.8	– 12
D427	D428	12.5	– 9
D429	D430	25	– 6
D431	D432	50	– 3
D433	D434	100	0
D435	D436	200	+ 3
D437	D438	400	+ 6

Note on Printed Wiring Boards:

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.

3-5. SCHEMATIC DIAGRAM – PRE AMP SECTION – (MU-A200/A400 : Identical)





Note on Schematic Diagram :

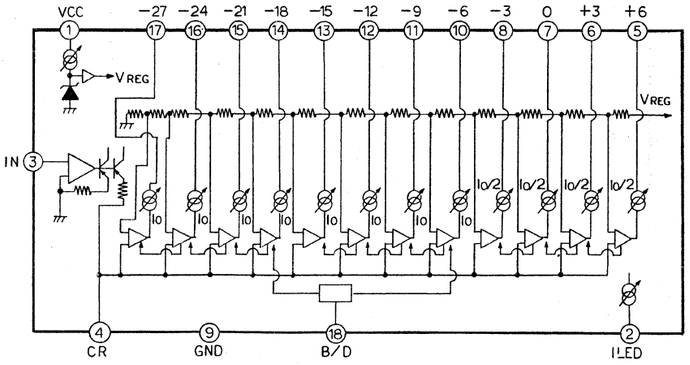
- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- ➡ : Signal path.

● IC BLOCK DIAGRAM

IC401, 402 (BA683A)



● SEMICONDUCTOR LOCATION (*: MUA-400)

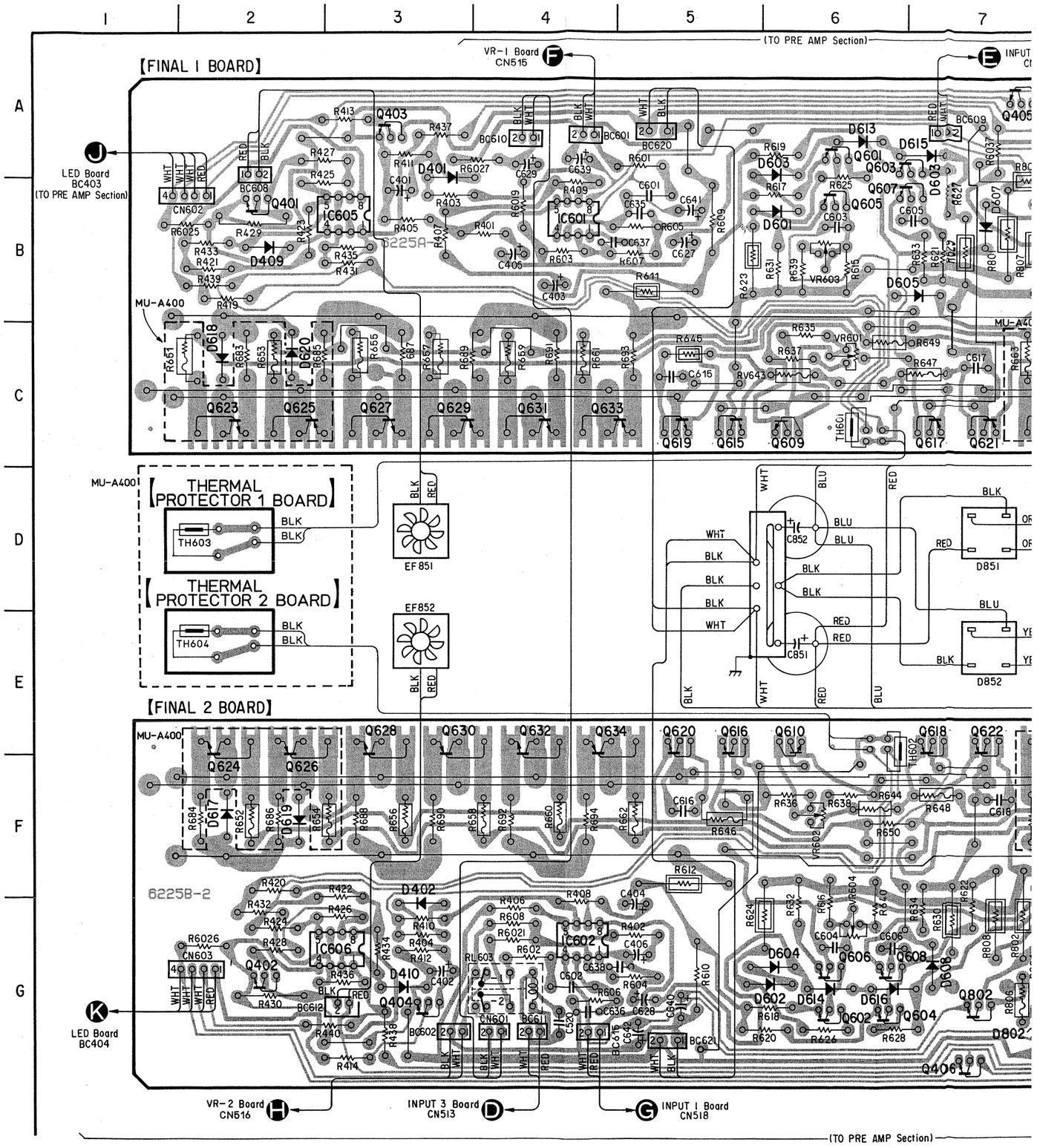
Ref. No.	Location	Ref. No.	Location
D401	A-3	Q611	B-8
D402	G-3	Q612	F-8
D409	B-2	Q613	B-9
D410	G-3	Q614	F-8
D601	B-6	Q615	C-5
D602	G-6	Q616	E-5
D603	A-6	Q617	C-7
D604	G-6	Q618	E-7
D605	B-7	Q619	C-5
D606	G-8	Q620	E-5
D607	B-7	Q621	C-7
D608	G-7	Q622	E-7
D609	A-9	Q623*	C-3
D610	G-9	Q624*	E-2
D611	A-10	Q625*	C-3
D612	G-10	Q626*	E-2
D613	A-6	Q627	C-3
D614	G-6	Q628	E-3
D615	A-7	Q629	C-3
D616	G-6	Q630	E-3
D617	F-2	Q631	C-4
D618	C-2	Q632	E-4
D619	F-2	Q633	C-4
D620	C-2	Q634	E-4
D621	B-8	Q635*	C-7
D622	G-9	Q636*	E-7
D801	A-8	Q637	C-8
D802	G-7	Q638	E-8
D803	B-9	Q639	C-9
D804	G-8	Q640	E-9
D851	D-7	Q641*	C-9
D852	E-7	Q642*	E-9
IC601	B-4	Q643*	C-10
IC602	G-4	Q644*	E-10
IC605	B-3	Q645*	C-10
IC606	G-3	Q646*	E-10
IC607	A-9	Q647	B-8
IC608	G-9	Q648	G-9
Q401	B-2	Q649	B-8
Q402	G-2	Q650	G-8
Q403	A-3	Q801	A-8
Q404	G-3	Q802	G-7
Q405	A-7	Q803	B-8
Q406	G-7	Q804	G-8
Q601	A-6		
Q602	G-6		
Q603	A-7		
Q604	G-6		
Q605	B-6		
Q606	G-6		
Q607	B-7		
Q608	G-6		
Q609	C-6		
Q610	E-6		

Note on Printed Wiring Boards:

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.

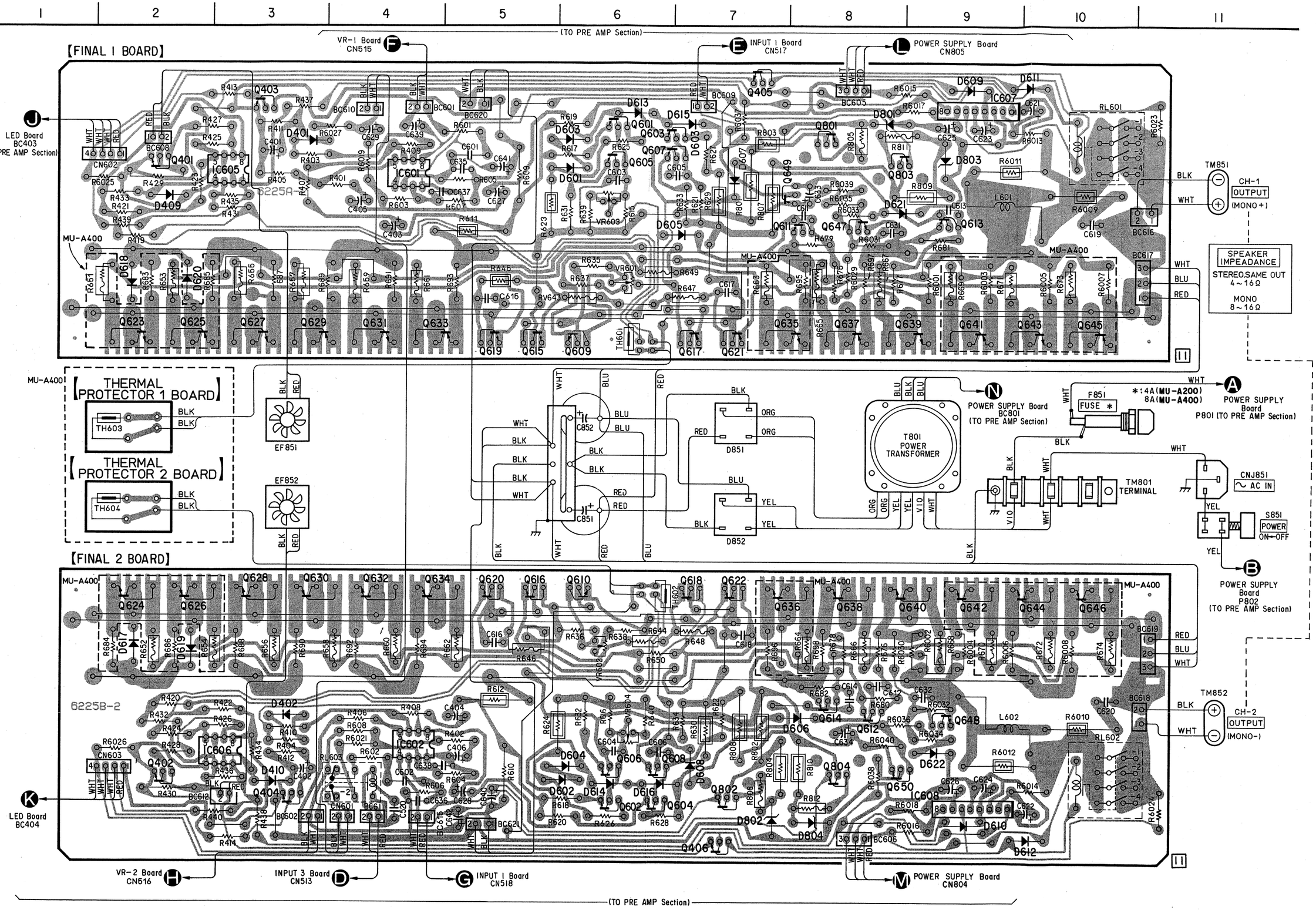
3-6. PRINTED WIRING BOARDS – MAIN AMP SECTION – (MU-A200/A400 : Common) (Conductor side)

● Refer to page 9 for Semiconductor Lead Layouts.

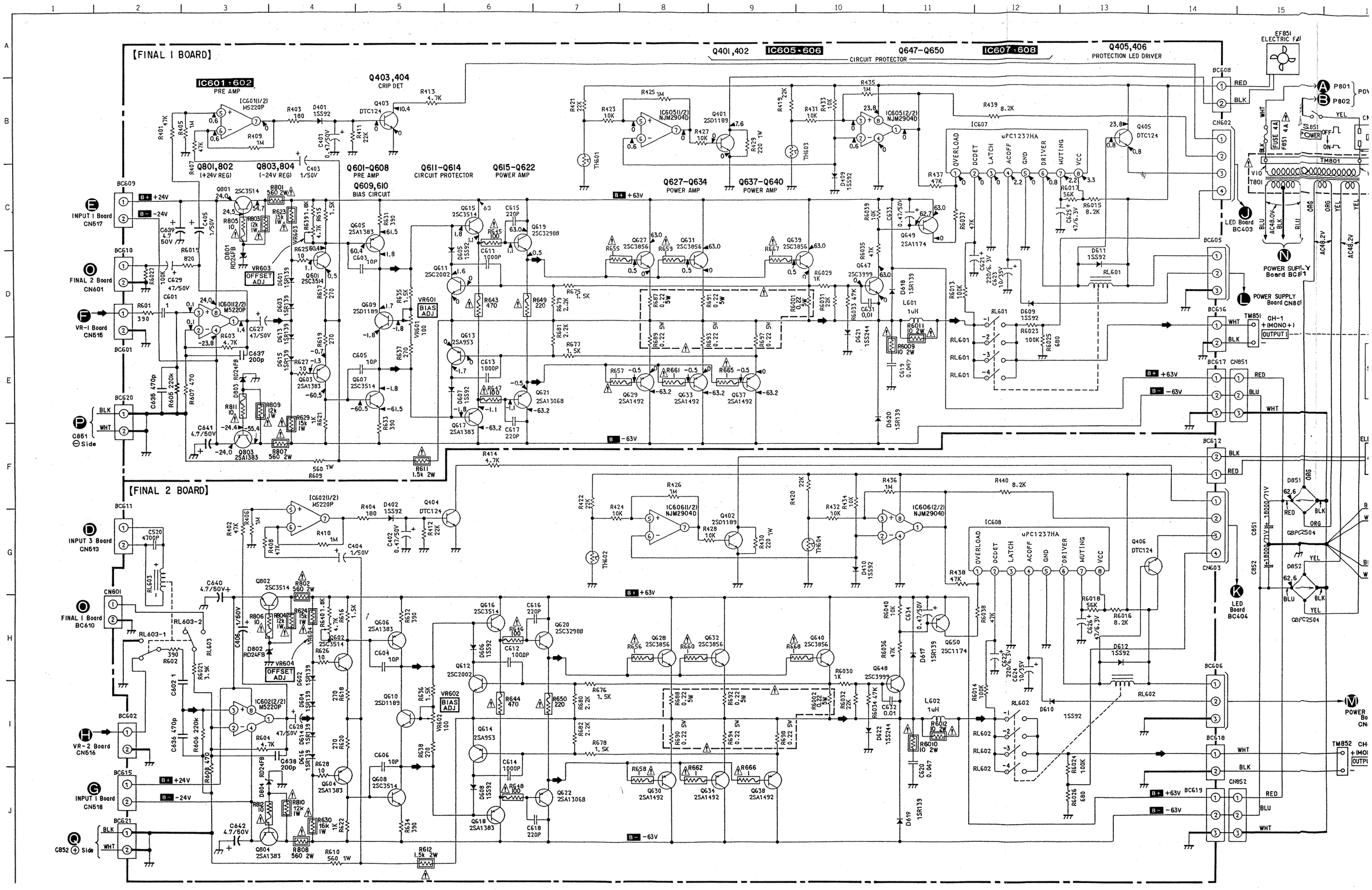


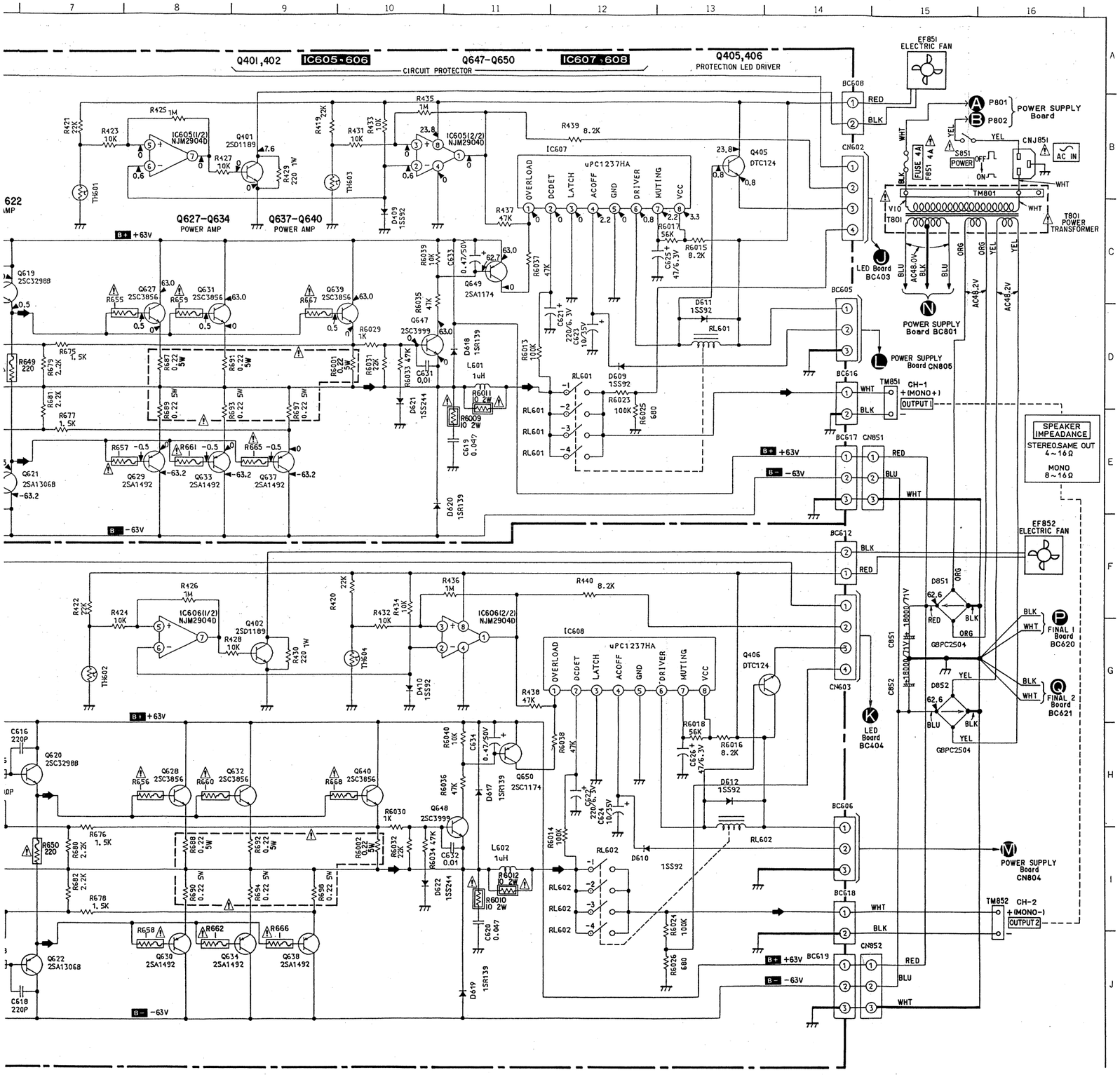
3-6. PRINTED WIRING BOARDS – MAIN AMP SECTION – (MU-A200/A400 : Common) (Conductor side)

● Refer to page 9 for Semiconductor Lead Layouts.



3-7. SCHEMATIC DIAGRAM – MAIN AMP SECTION – (MU-A200)





Note on Schematic Diagram :

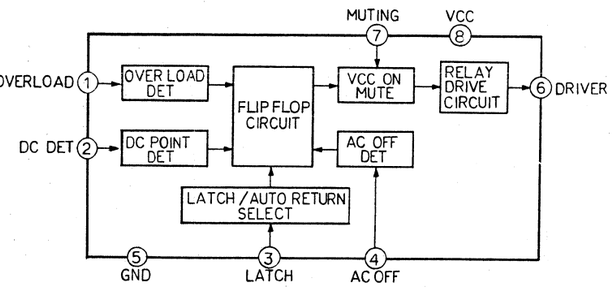
- All capacitors are in μ F unless noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- : Signal path.

• IC BLOCK DIAGRAM

IC607, 608 (μPC1237HA)



● SEMICONDUCTOR LOCATION (* : MUA-400)

Ref. No.	Location	Ref. No.	Location
D401	A-3	Q611	B-8
D402	G-3	Q612	F-8
D409	B-2	Q613	B-9
D410	G-3	Q614	F-8
D601	B-6	Q615	C-5
D602	G-6	Q616	E-5
D603	A-6	Q617	C-7
D604	G-6	Q618	E-7
D605	B-7	Q619	C-5
D606	G-8	Q620	E-5
D607	B-7	Q621	C-7
D608	G-7	Q622	E-7
D609	A-9	Q623*	C-3
D610	G-9	Q624*	E-2
D611	A-10	Q625*	C-3
D612	G-10	Q626*	E-2
D613	A-6	Q627	C-3
D614	G-6	Q628	E-3
D615	A-7	Q629	C-3
D616	G-6	Q630	E-3
D617	F-2	Q631	C-4
D618	C-2	Q632	E-4
D619	F-2	Q633	C-4
D620	C-2	Q634	E-4
D621	B-8	Q635*	C-7
D622	G-9	Q636*	E-7
D801	A-8	Q637	C-8
D802	G-7	Q638	E-8
D803	B-9	Q639	C-9
D804	G-8	Q640	E-9
D851	D-7	Q641*	C-9
D852	E-7	Q642*	E-9
IC601	B-4	Q643*	C-10
IC602	G-4	Q644*	E-10
IC605	B-3	Q645*	C-10
IC606	G-3	Q646*	E-10
IC607	A-9	Q647	B-8
IC608	G-9	Q648	G-9
Q401	B-2	Q649	B-8
Q402	G-2	Q650	G-8
Q403	A-3	Q801	A-8
Q404	G-3	Q802	G-7
Q405	A-7	Q803	B-8
Q406	G-7	Q804	G-8
Q601	A-6		
Q602	G-6		
Q603	A-7		
Q604	G-6		
Q605	B-6		
Q606	G-6		
Q607	B-7		
Q608	G-6		
Q609	C-6		
Q610	E-6		

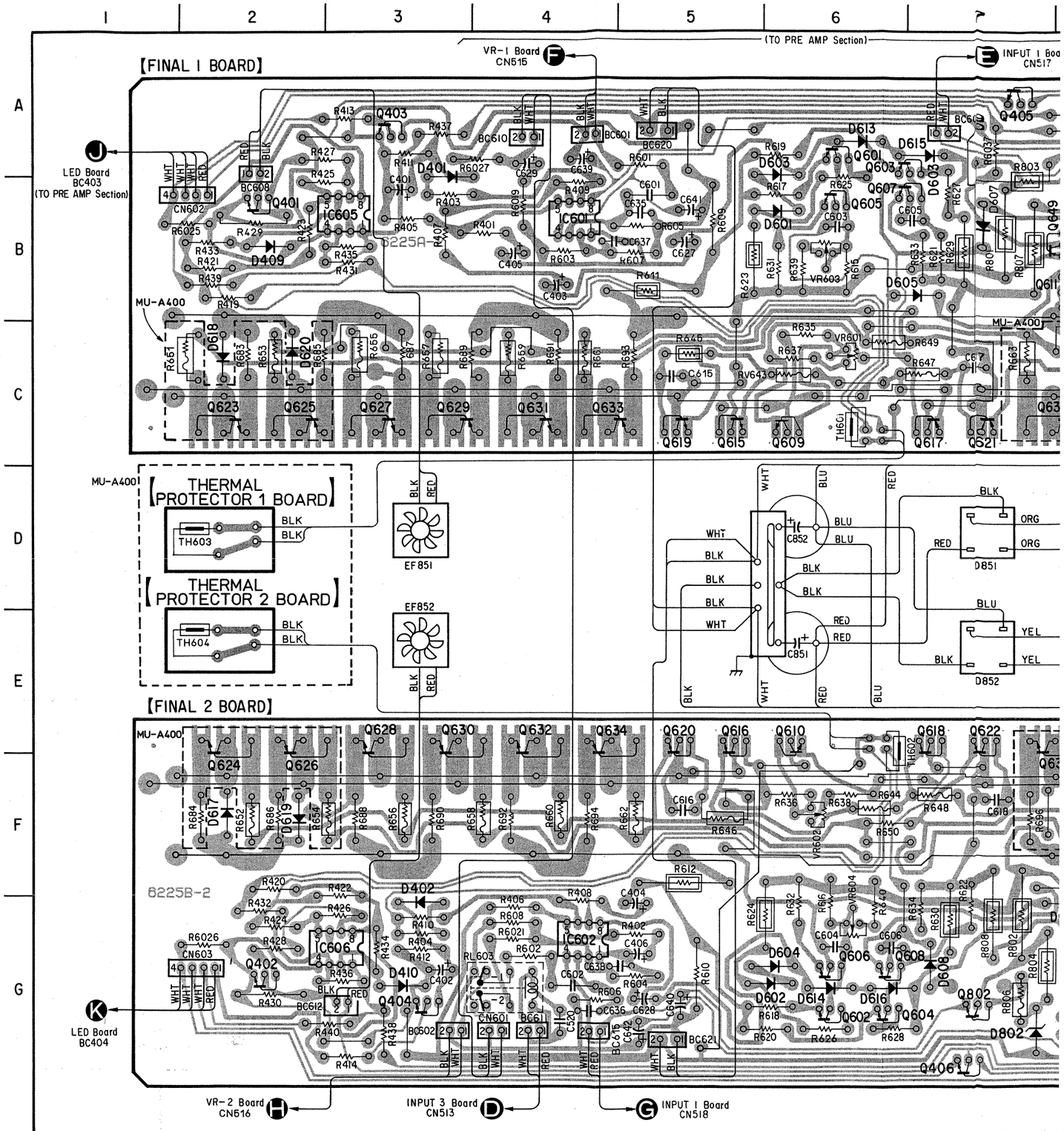
Note on Printed Wiring Boards:

- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.

3-8. PRINTED WIRING BOARDS – MAIN AMP SECTION – (MU-A200/A400 : Common)

(Conductor side)

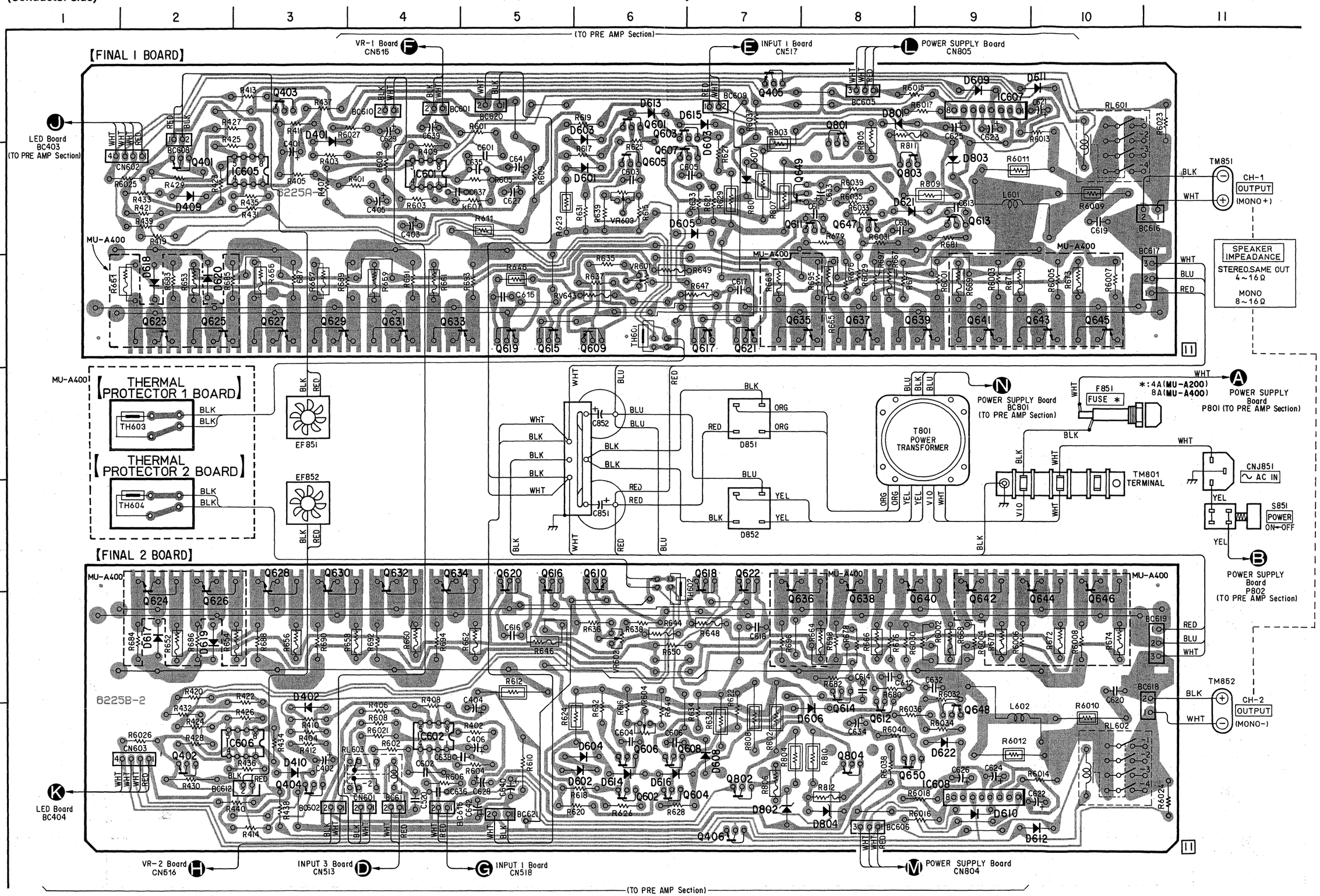
● Refer to page 9 for Semiconductor Lead Layouts.



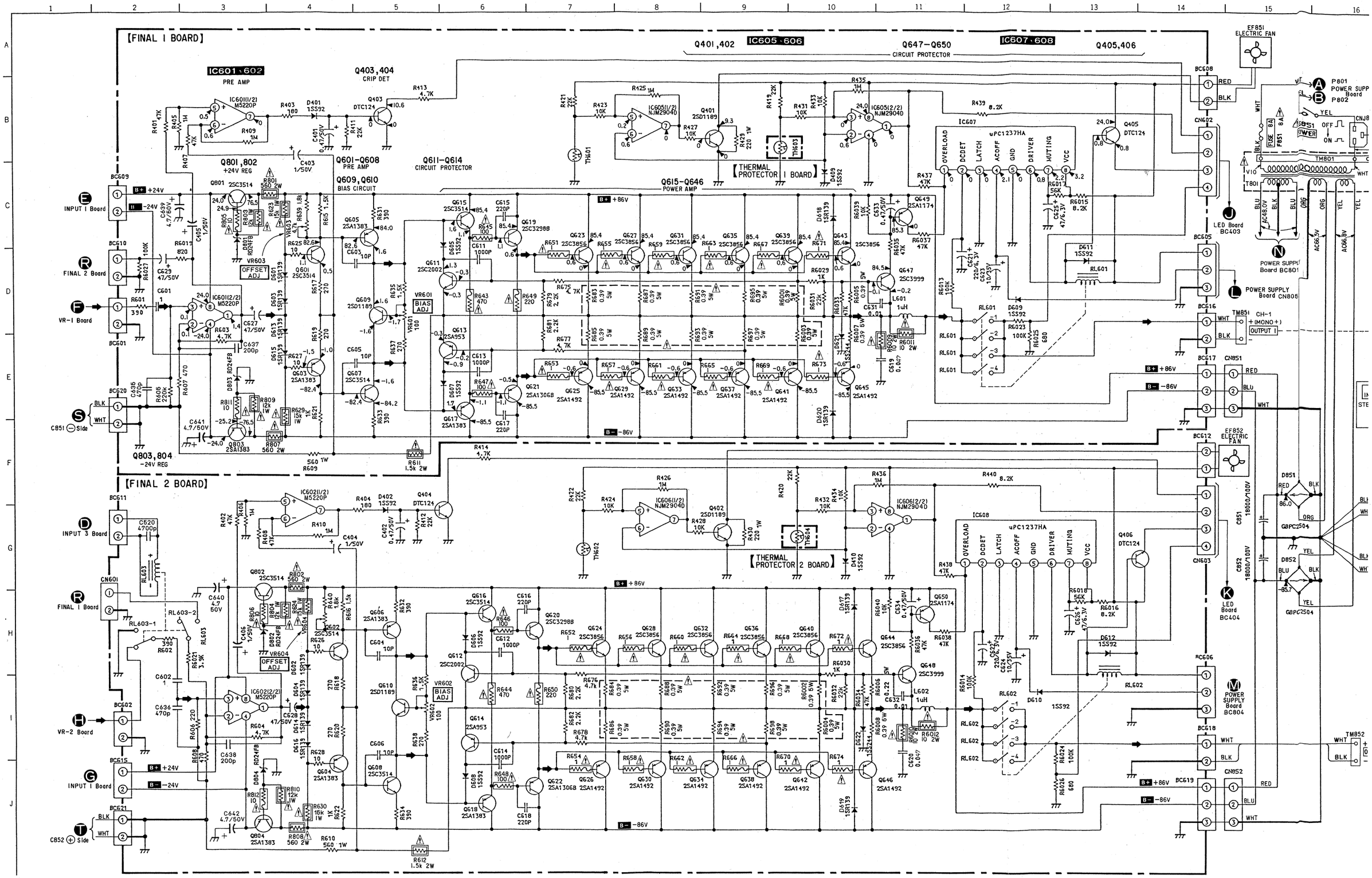
3-8. PRINTED WIRING BOARDS – MAIN AMP SECTION – (MU-A200/A400 : Common)

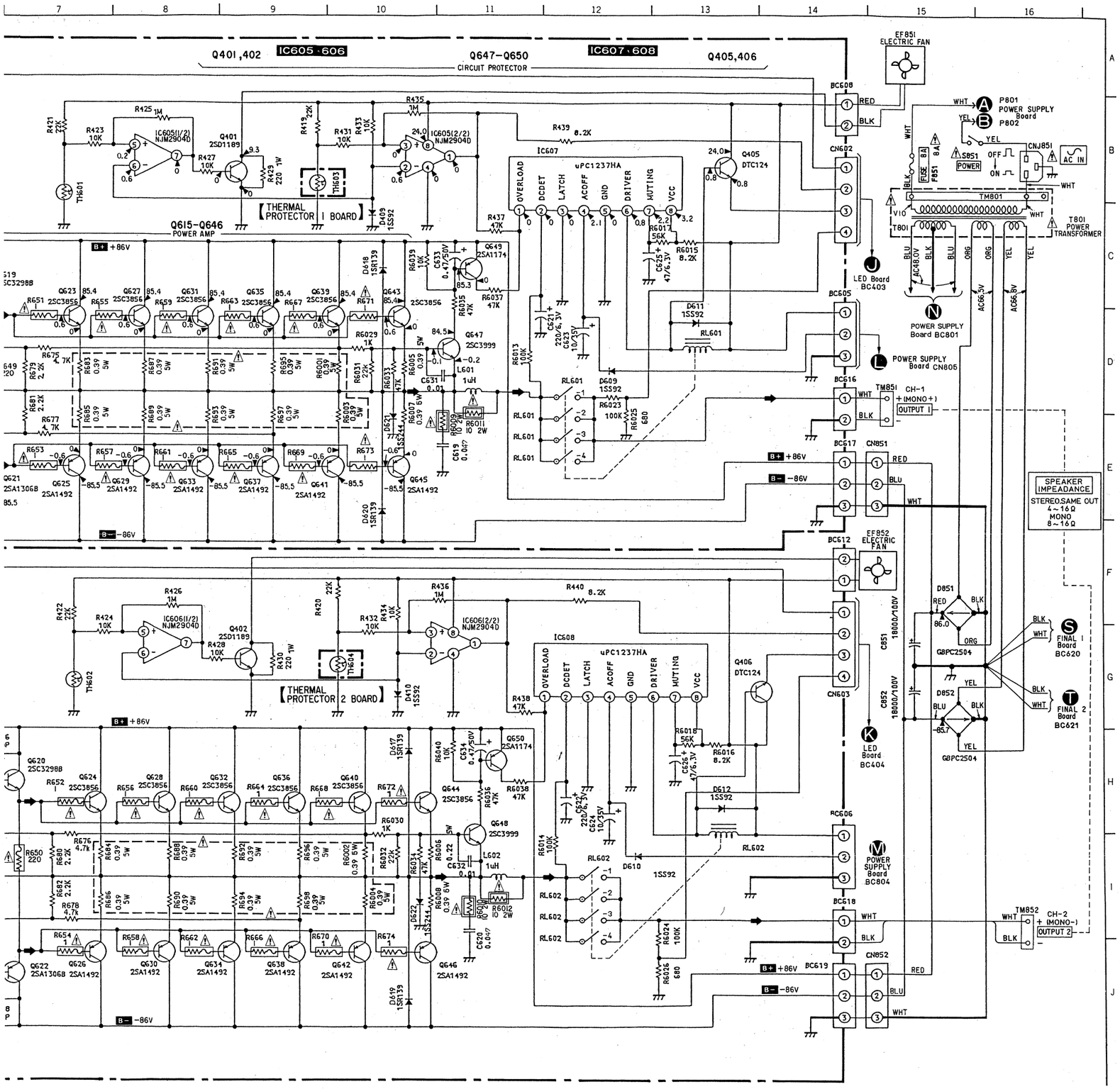
(Conductor side)

● Refer to page 9 for Semiconductor Lead Layouts.



3-9. SCHEMATIC DIAGRAM – MAIN AMP SECTION – (MU-A400)





Note on Schematic Diagram :

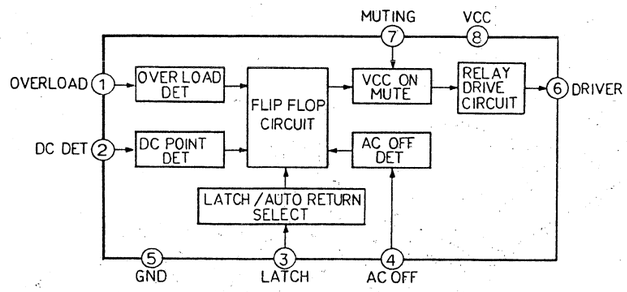
- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.

Note :	Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- : Signal path.

● IC BLOCK DIAGRAM

IC607, 608 (μ PC1237HA)



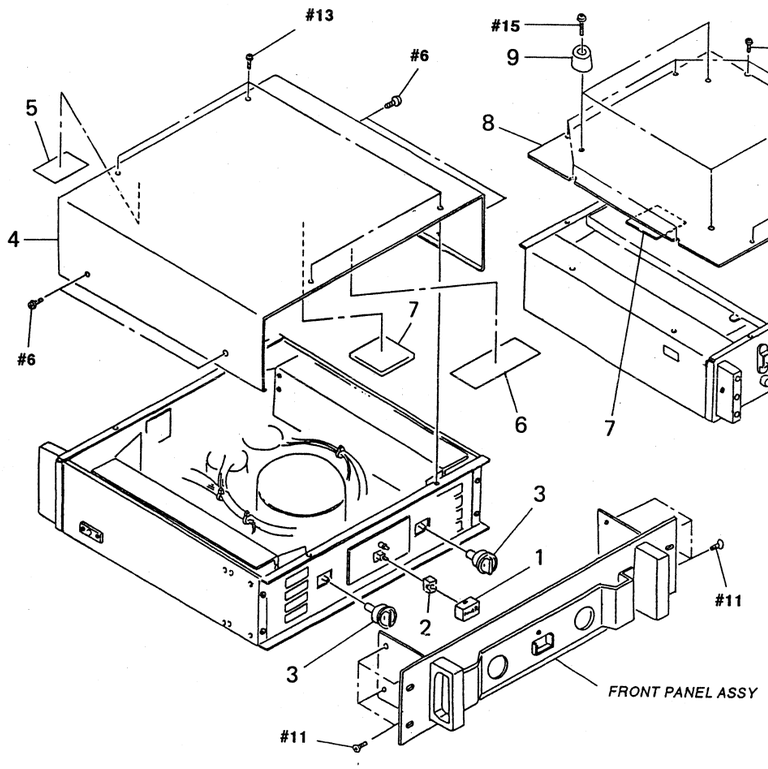
SECTION 4
EXPLODED VIEWS

NOTE :

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)....(RED)
  ↑ Parts color ↑ Cabinet's color
- Hardware (# mark)list is given in the last of this parts list.

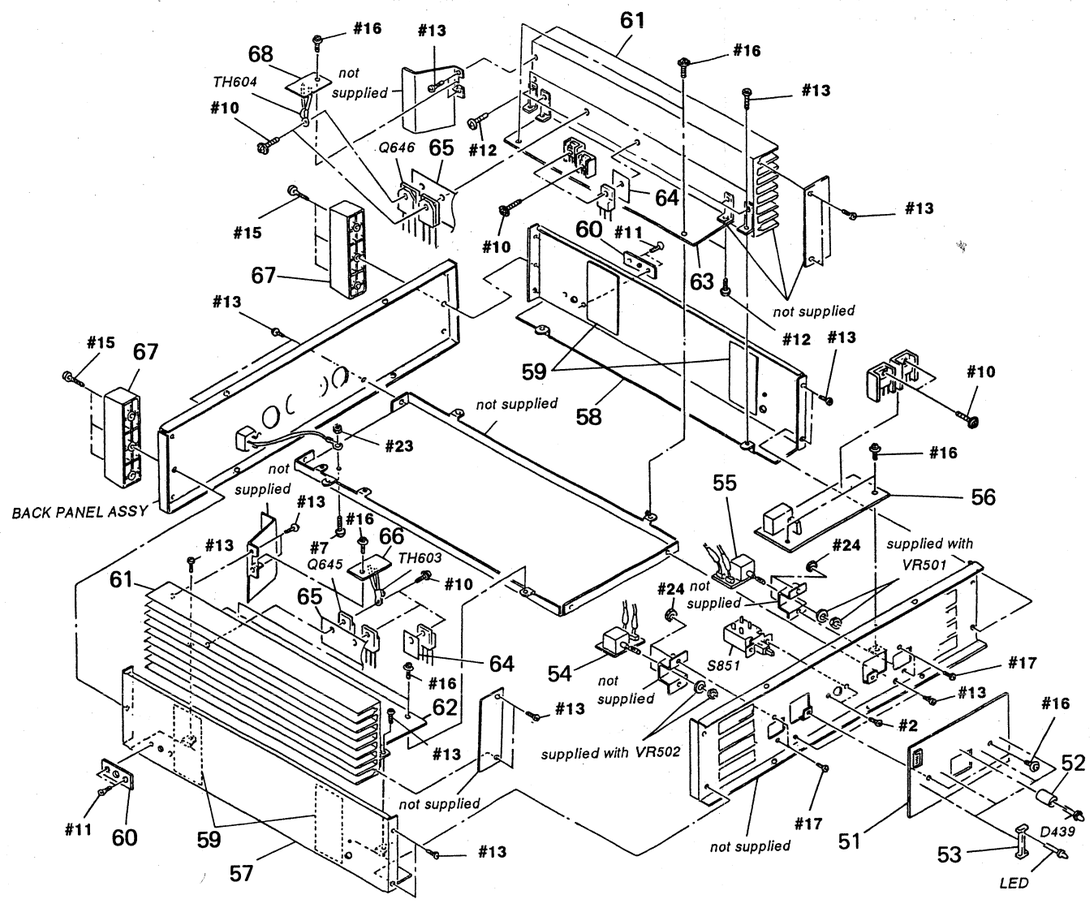
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4-1. OUTER EXTERNAL SECTION



Ref.No.	Part No.	Description	Remarks
1	2-337-209-01	KNOB, SQUARE(POWER)	
2	4-864-307-00	RING(FLEXIBLE)	
3	2-338-186-01	KNOB	
* 4	2-338-316-01	(MU-A400)..PLATE, TOP	
* 4	2-338-327-01	(MU-A200)..PLATE, TOP	
* 5	2-338-324-01	(MU-A200)..INSULATOR(50X71X0.5)	
* 6	2-338-494-01	(MU-A200)..SHEET, INSULATION(140X75X0.5)	
* 7	2-338-496-01	(MU-A400).. RUBBER, VIBRATION PROOF(50X50X2)	
* 7	2-338-496-11	(MU-A200).. RUBBER, VIBRATION PROOF(50X50X4)	
* 8	2-338-328-01	PLATE, BOTTOM	
9	2-335-084-01	FOOT	

4-2. MAIN SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

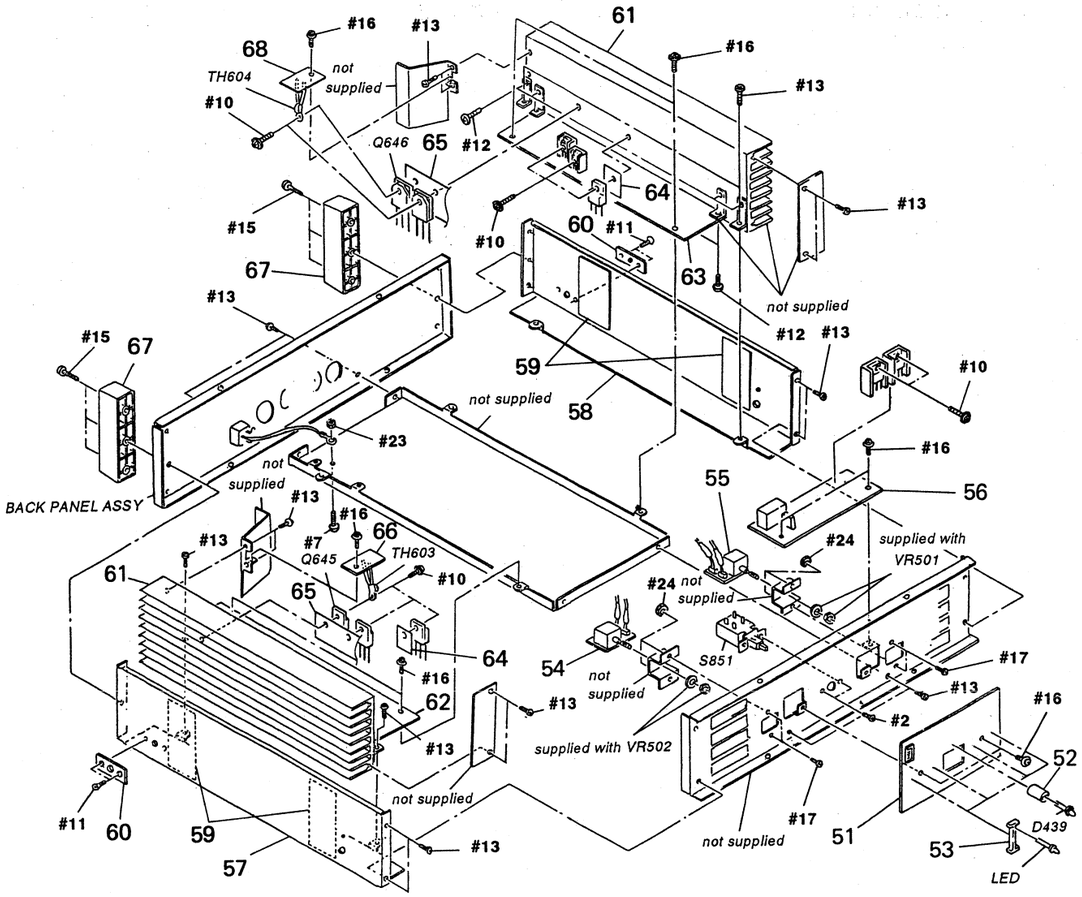
Ref.No.	Part No.	Description	Remarks
* 51	1-642-606-11	PC BOARD, LED	
52	2-338-499-01	LED SPACER(CYLINDRICAL)	
53	2-338-500-01	LED SPACER(RECTANGULAR)	
* 54	1-642-602-11	PC BOARD, VR-1	
* 55	1-642-601-11	PC BOARD, VR-2	
* 56	1-642-575-11	PC BOARD, POWER SUPPLY	
* 57	2-338-330-01	(MU-A400)..PANEL(L), SIDE	
* 57	2-338-336-01	(MU-A200)..PANEL(L), SIDE	
* 58	2-338-330-11	(MU-A400)..PANEL(R), SIDE	
* 58	2-338-337-01	(MU-A200)..PANEL(R), SIDE	
* 59	2-338-495-01	(MU-A400).. RUBBER, VIBRATION PROOF(A) (50X120X8)	
* 59	2-338-498-01	(MU-A200).. RUBBER, VIBRATION PROOF(B) (50X75X8)	
* 60	2-338-323-01	REINFORCEMENT(A)	
* 61	2-338-331-01	(MU-A400)..HEAT SINK	
* 61	2-338-335-01	(MU-A200)..HEAT SINK	
* 62	A-4588-484-A	(MU-A400)..MOUNTED PCB, FINAL(1)	
* 62	A-4588-486-A	(MU-A200)..MOUNTED PCB, FINAL(1)	
* 63	A-4588-485-A	(MU-A400)..MOUNTED PCB, FINAL(2)	
* 63	A-4588-487-A	(MU-A200)..MOUNTED PCB, FINAL(2)	
64	4-879-937-01	SHEET, MICA(SINGLE)	
65	2-338-501-01	SHEET, MICA(SERIES)	
* 66	1-646-271-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 1	
* 67	2-338-185-01	(MU-A400)..FOOT	
67	2-337-453-01	(MU-A200)..FOOT	
* 68	1-646-272-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 2	
⚠S851	1-571-649-11	SWITCH, PUSH(AC POWER)	

4-3. FRONT PANEL

not sup

Ref.No.	Part No.
* 101	2-338-31
* 101	2-338-32
* 102	2-338-18
* 102	2-338-22
* 103	2-338-40

4-2. MAIN SECTION



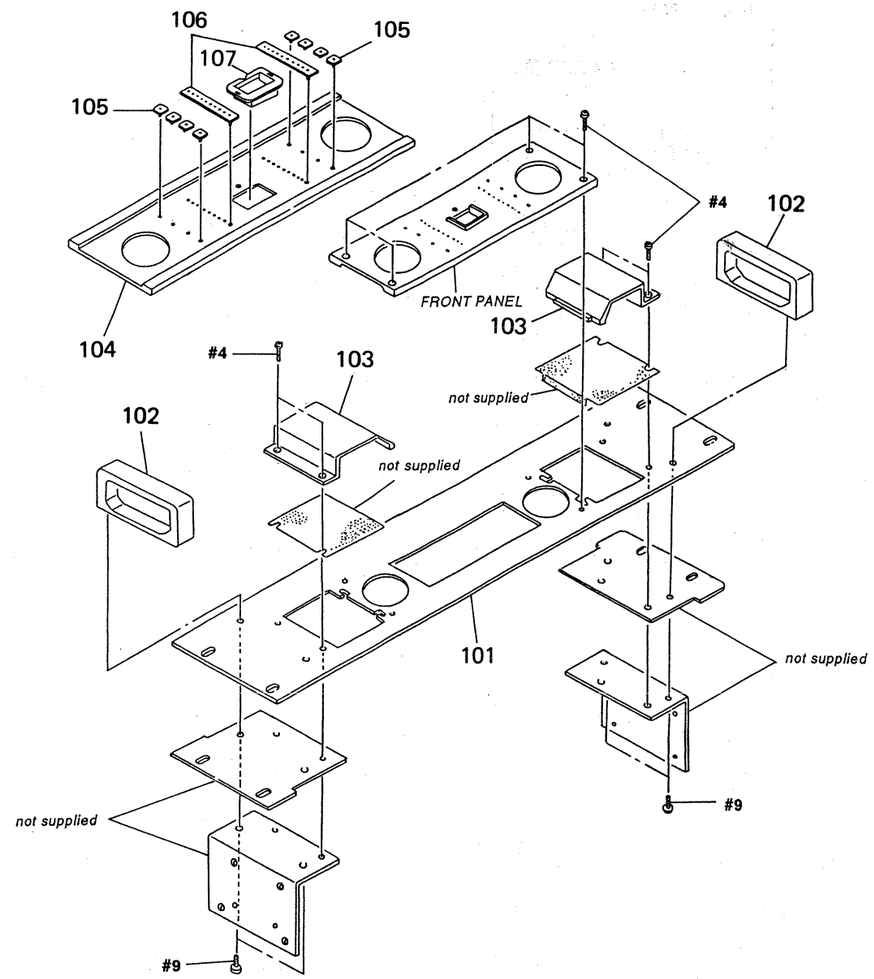
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Remarks
* 51	1-642-606-11	PC BOARD, LED	
52	2-338-499-01	LED SPACER(CYLINDRICAL)	
53	2-338-500-01	LED SPACER(RECTANGULAR)	
* 54	1-642-602-11	PC BOARD, VR-1	
* 55	1-642-601-11	PC BOARD, VR-2	
* 56	1-642-575-11	PC BOARD, POWER SUPPLY	
* 57	2-338-330-01	(MU-A400)..PANEL(L), SIDE	
* 57	2-338-336-01	(MU-A200)..PANEL(L), SIDE	
* 58	2-338-330-11	(MU-A400)..PANEL(R), SIDE	
* 58	2-338-337-01	(MU-A200)..PANEL(R), SIDE	
* 59	2-338-495-01	(MU-A400).. RUBBER, VIBRATION PROOF(A) (50X120X8)	
* 59	2-338-498-01	(MU-A200).. RUBBER, VIBRATION PROOF(B) (50X75X8)	
* 60	2-338-323-01	REINFORCEMENT(A)	

Ref.No.	Part No.	Description	Remarks
* 61	2-338-331-01	(MU-A400)..HEAT SINK	
* 61	2-338-335-01	(MU-A200)..HEAT SINK	
* 62	A-4588-484-A	(MU-A400)..MOUNTED PCB, FINAL(1)	
* 62	A-4588-486-A	(MU-A200)..MOUNTED PCB, FINAL(1)	
* 63	A-4588-485-A	(MU-A400)..MOUNTED PCB, FINAL(2)	
* 63	A-4588-487-A	(MU-A200)..MOUNTED PCB, FINAL(2)	
64	4-879-937-01	SHEET, MICA(SINGLE)	
65	2-338-501-01	SHEET, MICA(SERIES)	
* 66	1-646-271-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 1	
* 67	2-338-185-01	(MU-A400)..FOOT	
67	2-337-453-01	(MU-A200)..FOOT	
* 68	1-646-272-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 2	
⚠S851	1-571-649-11	SWITCH, PUSH(AC POWER)	

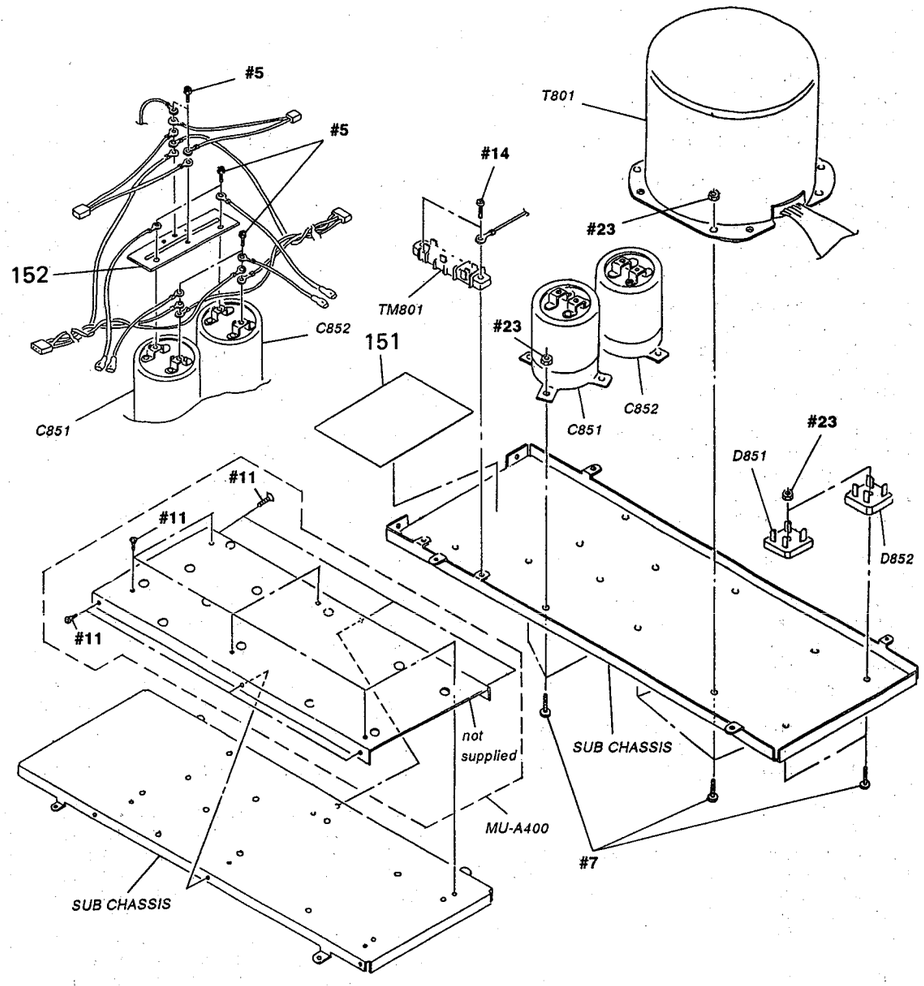
4-3. FRONT PANEL SECTION



Ref.No.	Part No.	Description	Remarks
* 101	2-338-317-01	(MU-A400)..PANEL(BASE), FRONT	
* 101	2-338-326-01	(MU-A200)..PANEL(BASE), FRONT	
* 102	2-338-184-01	(MU-A400)..HANDLE	
* 102	2-338-222-01	(MU-A200)..HANDLE	
* 103	2-338-400-01	COVER	

Ref.No.	Part No.	Description	Remarks
104	2-338-339-01	(MU-A400)..PANEL, FRONT	
104	2-338-339-11	(MU-A200)..PANEL, FRONT	
* 105	2-337-212-01	ESCUTCHEON(SMALL)	
* 106	2-337-199-01	ESCUTCHEON, LAMP	
* 107	2-337-200-01	ESCUTCHEON, SWITCH	

4-4. MAIN CHASSIS SECTION

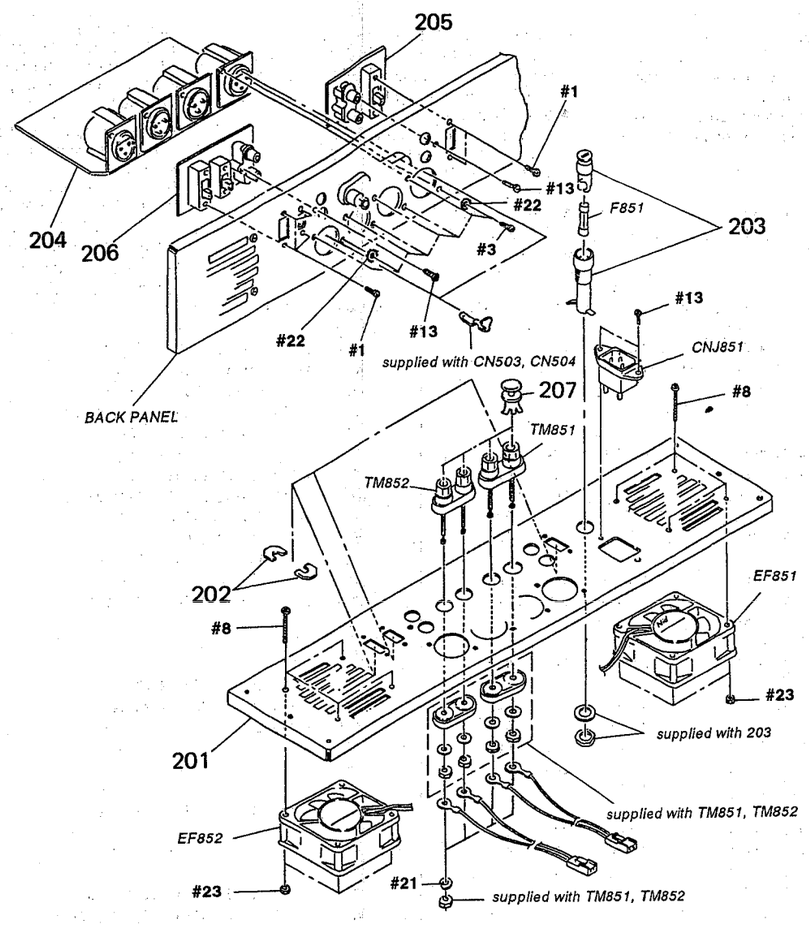


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			Remarks
* 151	2-338-494-01	(MU-A200)..SHEET, INSULATION(140X75X0.5)			
* 152	2-335-096-01	PLATE, ELECTRODE, GROUND			
C851	1-125-424-11	(MU-A400)..ELECT 18000uF	20%	100V	
C851	1-125-425-11	(MU-A200)..ELECT 18000uF	20%	71V	
C852	1-125-424-11	(MU-A400)..ELECT 18000uF	20%	100V	
C852	1-125-425-11	(MU-A200)..ELECT 18000uF	20%	71V	

Ref.No.	Part No.	Description	Remarks
D851	8-719-029-99	DIODE GBPC2504	
D852	8-719-029-99	DIODE GBPC2504	
⚠T801	1-450-906-11	(MU-A400)..TRANSFORMER, POWER	
⚠T801	1-450-904-11	(MU-A200)..TRANSFORMER, POWER	
⚠TM801	*1-537-125-11	TERMINAL BOARD	

4-5. BACK PANEL SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Remarks
* 201	X-2335-295-1	(MU-A400)..PANEL ASSY, BACK	
* 201	X-2335-296-1	(MU-A200)..PANEL ASSY, BACK	
* 202	2-338-497-01	SPACER, SWITCH	
203	1-533-210-11	HOLDER, FUSE	
* 204	A-4588-481-A	MOUNTED PCB, INPUT(1)	
* 205	1-642-604-11	MOUNTED PCB, INPUT(2)	
* 206	1-642-605-11	MOUNTED PCB, INPUT(3)	
207	4-812-134-00	RIVET, NYLON, 3.5(BLK)	

Ref.No.	Part No.	Description	Remarks
⚠CNJ851	*1-580-375-21	INLET 3P (~AC IN)	
EF851	1-541-974-11	FAN, ELECTRIC	
EF852	1-541-974-11	FAN, ELECTRIC	
⚠F851	1-576-258-11	(MU-A400)..FUSE, GLASS TUBE (250V 8A)	
⚠F851	1-532-350-00	(MU-A200)..FUSE, TIME-LAG (GLASS TUBE) (250V 4A)	
TM851	1-536-961-11	TERMINAL(5-WAY) (OUTPUT 1)	
TM852	1-536-961-11	TERMINAL(5-WAY) (OUTPUT 2)	

SECTION 5
ELECTRICAL PARTS LIST

FINAL(1)

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remarks
*	A-4588-484-A	MOUNTED PCB, FINAL(1)			
		**********			
		< CAPACITOR >			
C401	1-124-902-00	ELECT	0.47uF	20% 50V	
C403	1-124-903-11	ELECT	1uF	20% 50V	
C405	1-124-903-11	ELECT	1uF	20% 50V	
C601	1-136-177-00	FILM	1uF	5% 50V	
C603	1-107-202-00	MICA	10PF	5% 500V	
C605	1-107-202-00	MICA	10PF	5% 500V	
C611	1-161-141-00	CERAMIC	0.001uF	10% 50V	
C613	1-161-141-00	CERAMIC	0.001uF	10% 50V	
C615	1-109-621-00	MICA	220PF	1% 500V	
C617	1-109-621-00	MICA	220PF	1% 500V	
C619	1-106-383-00	MYLAR	0.047uF	5% 200V	
C621	1-126-176-11	ELECT	220uF	20% 10V	
C623	1-124-907-11	ELECT	10uF	20% 50V	
C625	1-124-126-00	ELECT	47uF	20% 10V	
C627	1-124-910-11	ELECT	47uF	20% 50V	
C629	1-124-910-11	ELECT	47uF	20% 50V	
C631	1-161-051-00	CERAMIC	0.01uF	10% 50V	
C633	1-124-902-00	ELECT	0.47uF	20% 50V	
C635	1-109-633-00	MICA	470PF	5% 500V	
C637	1-109-620-00	MICA	200PF	5% 500V	
C639	1-124-927-11	ELECT	4.7uF	20% 50V	
C641	1-124-927-11	ELECT	4.7uF	20% 50V	
		< DIODE >			
D401	8-719-901-83	DIODE	1SS83		
D409	8-719-901-83	DIODE	1SS83		
D601	8-719-970-02	DIODE	1SR139-400		
D603	8-719-970-02	DIODE	1SR139-400		
D605	8-719-901-83	DIODE	1SS83		
D607	8-719-901-83	DIODE	1SS83		
D609	8-719-901-83	DIODE	1SS83		
D611	8-719-901-83	DIODE	1SS83		
D613	8-719-970-02	DIODE	1SR139-400		
D615	8-719-970-02	DIODE	1SR139-400		
D618	8-719-970-02	DIODE	1SR139-400		
D620	8-719-970-02	DIODE	1SR139-400		
D621	8-719-901-83	DIODE	1SS83		
D622	8-719-901-83	DIODE	1SS83		
D801	8-719-160-77	DIODE	RD24FB1		
D803	8-719-160-77	DIODE	RD24FB1		
		< IC >			
IC601	8-759-602-01	IC	M5220P		
IC605	8-759-700-42	IC	NJM2904D		
IC607	8-759-111-68	IC	uPC1237HA		
		< COIL >			
L601	1-422-358-11	COIL, AIR-CORE			
		< TRANSISTOR >			
Q401	8-729-925-38	TRANSISTOR	2SD1189		
Q403	8-729-900-36	TRANSISTOR	DTC124ES		
Q405	8-729-900-36	TRANSISTOR	DTC124ES		
Q601	8-729-104-18	TRANSISTOR	2SC3514		
Q603	8-729-104-91	TRANSISTOR	2SA1383		
Q605	8-729-104-91	TRANSISTOR	2SA1383		
Q607	8-729-104-18	TRANSISTOR	2SC3514		
Q609	8-729-925-38	TRANSISTOR	2SD1189		
Q611	8-729-143-40	TRANSISTOR	2SC2002-L		
Q613	8-729-103-62	TRANSISTOR	2SA953-LA		

Ref.No.	Part No.	Description			Remarks
Q615	8-729-104-18	TRANSISTOR	2SC3514		
Q617	8-729-104-91	TRANSISTOR	2SA1383		
Q619	8-729-208-72	TRANSISTOR	2SC3298B-Y		
Q621	8-729-208-75	TRANSISTOR	2SA1306B-Y		
Q623	8-729-010-97	(MU-A400).. TRANSISTOR	2SC3856		
Q625	8-729-303-86	(MU-A400).. TRANSISTOR	2SA1492-Y		
Q627	8-729-010-97	TRANSISTOR	2SC3856		
Q629	8-729-303-86	TRANSISTOR	2SA1492-Y		
Q631	8-729-010-97	TRANSISTOR	2SC3856		
Q633	8-729-303-86	TRANSISTOR	2SA1492-Y		
Q635	8-729-010-97	(MU-A400).. TRANSISTOR	2SC3856		
Q637	8-729-303-86	TRANSISTOR	2SA1492-Y		
Q639	8-729-010-97	TRANSISTOR	2SC3856		
Q641	8-729-303-86	(MU-A400).. TRANSISTOR	2SA1492-Y		
Q643	8-729-010-97	(MU-A400).. TRANSISTOR	2SC3856		
Q645	8-729-303-86	(MU-A400).. TRANSISTOR	2SA1492-Y		
Q647	8-729-117-07	TRANSISTOR	2SC3999-L		
Q649	8-729-117-43	TRANSISTOR	2SA1174		
Q801	8-729-104-18	TRANSISTOR	2SC3514		
Q803	8-729-104-91	TRANSISTOR	2SA1383		
		< RESISTOR >			
R401	1-249-437-11	CARBON	47K	5% 1/4W	
R403	1-249-408-11	CARBON	180	5% 1/4W	
R405	1-247-903-00	CARBON	1M	5% 1/4W	
R407	1-249-437-11	CARBON	47K	5% 1/4W	
R409	1-247-903-00	CARBON	1M	5% 1/4W	
R411	1-249-433-11	CARBON	22K	5% 1/4W	
R413	1-249-425-11	CARBON	4.7K	5% 1/4W	
R419	1-249-433-11	CARBON	22K	5% 1/4W	
R421	1-249-433-11	CARBON	22K	5% 1/4W	
R423	1-249-429-11	CARBON	10K	5% 1/4W	
R425	1-247-903-00	CARBON	1M	5% 1/4W	
R427	1-249-429-11	CARBON	10K	5% 1/4W	
R429	1-215-865-11	METAL	220	1% 1W	
R431	1-249-429-11	CARBON	10K	5% 1/4W	
R433	1-249-429-11	CARBON	10K	5% 1/4W	
R435	1-247-903-00	CARBON	1M	5% 1/4W	
R437	1-249-437-11	CARBON	47K	5% 1/4W	
R439	1-249-428-11	CARBON	8.2K	5% 1/4W	
R601	1-249-412-11	CARBON	390	5% 1/4W	
R603	1-249-425-11	CARBON	4.7K	5% 1/4W	
R605	1-247-887-00	CARBON	220K	5% 1/4W	
R607	1-249-413-11	CARBON	470	5% 1/4W	
R609	1-216-431-11	METAL	560	1% 1W	
⚠R611	1-215-893-11	METAL OXIDE	1.5K	5% 2W F	
R615	1-249-419-11	CARBON	1.5K	5% 1/4W	
R617	1-249-410-11	CARBON	270	5% 1/4W	
R619	1-249-410-11	CARBON	270	5% 1/4W	
R621	1-249-417-11	CARBON	1K	5% 1/4W	
⚠R623	1-215-876-00	METAL OXIDE	15K	5% 1W F	
R625	1-249-393-11	CARBON	10	5% 1/4W	
R627	1-249-393-11	CARBON	10	5% 1/4W	
⚠R629	1-215-876-00	METAL OXIDE	15K	5% 1W F	
R631	1-249-412-11	CARBON	390	5% 1/4W	
R633	1-249-412-11	CARBON	390	5% 1/4W	
R635	1-249-419-11	CARBON	1.5K	5% 1/4W	
R637	1-249-410-11	CARBON	270	5% 1/4W	
R639	1-249-420-11	CARBON	1.8K	5% 1/4W	
⚠R643	1-212-897-00	FUSIBLE	470	5% 1/4W F	
⚠R645	1-212-881-11	FUSIBLE	100	5% 1/4W F	
⚠R647	1-212-881-11	FUSIBLE	100	5% 1/4W F	
⚠R649	1-212-889-00	FUSIBLE	220	5% 1/4W F	
⚠R651	1-217-637-00	(MU-A400).. FUSIBLE	1	5% 1/4W F	
⚠R653	1-217-637-00	(MU-A400).. FUSIBLE	1	5% 1/4W F	
⚠R655	1-217-637-00	FUSIBLE	1	5% 1/4W F	
⚠R657	1-217-637-00	FUSIBLE	1	5% 1/4W F	
⚠R659	1-217-637-00	FUSIBLE	1	5% 1/4W F	
⚠R661	1-217-637-00	FUSIBLE	1	5% 1/4W F	
⚠R663	1-217-637-00	(MU-A400).. FUSIBLE	1	5% 1/4W F	
⚠R665	1-217-637-00	FUSIBLE	1	5% 1/4W F	
⚠R667	1-217-637-00	FUSIBLE	1	5% 1/4W F	
⚠R669	1-217-637-00	(MU-A400).. FUSIBLE	1	5% 1/4W F	
⚠R671	1-217-637-00	(MU-A400).. FUSIBLE	1	5% 1/4W F	
⚠R673	1-217-637-00	(MU-A400).. FUSIBLE	1	5% 1/4W F	
R675	1-249-419-11	CARBON	1.5K	5% 1/4W	
R677	1-249-419-11	CARBON	1.5K	5% 1/4W	
R679	1-249-421-11	CARBON	2.2K	5% 1/4W	
R681	1-249-421-11	CARBON	2.2K	5% 1/4W	
⚠R683	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R685	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R687	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R687	1-217-156-00	(MU-A200).. RES, METAL PLATE	0.22	5W	
⚠R689	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R689	1-217-156-00	(MU-A200).. RES, METAL PLATE	0.22	5W	
⚠R691	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R691	1-217-156-00	(MU-A200).. RES, METAL PLATE	0.22	5W	
⚠R693	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R693	1-217-156-00	(MU-A200).. RES, METAL PLATE	0.22	5W	
⚠R695	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R697	1-202-959-11	(MU-A400).. RES, METAL PLATE	0.39	5W	
⚠R697	1-217-156-00	(MU-A200).. RES, METAL PLATE	0.22	5W	
⚠R801	1-216-455-11	METAL OXIDE	560	5% 2W F	
⚠R803	1-216-439-00	METAL OXIDE	12K	5% 1W F	
⚠R805	1-212-857-00	FUSIBLE	10	5% 1/4W F	
⚠R807	1-216-455-11	METAL OXIDE	560	5% 2W F	
⚠R809	1-216-439-00	METAL OXIDE	12K	5% 1W F	
⚠R811	1-212-857-00	FUSIBLE	10	5% 1/4W F	

When indicating parts by reference number, please include the board.

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Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

FINAL(1) FINAL(2)

Ref.No.	Part No.	Description			Remarks
⚠R6001	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6001	1-217-156-00	(MU-A200)..RES, METAL PLATE	0.22	5W	
⚠R6003	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6005	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6007	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6009	1-215-880-00	METAL OXIDE	10 5%	2W F	
⚠R6011	1-215-880-00	METAL OXIDE	10 5%	2W F	
R6013	1-249-441-11	CARBON	100K 5%	1/4W	
R6015	1-249-428-11	CARBON	8.2K 5%	1/4W	
R6017	1-249-438-11	CARBON	56K 5%	1/4W	
R6019	1-249-416-11	CARBON	820 5%	1/4W	
R6023	1-249-441-11	CARBON	100K 5%	1/4W	
R6025	1-249-415-11	CARBON	680 5%	1/4W	
R6027	1-249-441-11	CARBON	100K 5%	1/4W	
R6029	1-249-417-11	CARBON	1K 5%	1/4W	
R6031	1-249-433-11	CARBON	22K 5%	1/4W	
R6033	1-249-437-11	CARBON	47K 5%	1/4W	
R6035	1-249-437-11	CARBON	47K 5%	1/4W	
R6037	1-249-437-11	CARBON	47K 5%	1/4W	
R6039	1-249-429-11	CARBON	10K 5%	1/4W	
		< RELAY >			
RL601	1-515-611-11	RELAY, MINI POWER			
		< THERMISTOR >			
TH601	1-806-064-11	POSISTOR(THERMAL PROTECT)			
TH603	1-800-427-00	POSISTOR(THERMAL PROTECT)			
		< VARIABLE RESISTOR >			
VR601	1-230-530-11	RES, ADJ, METAL GRAZE 100			
VR603	1-230-522-11	RES, ADJ, METAL GRAZE 4.7K			
**********					
*	A-4588-485-A	MOUNTED PCB, FINAL(2)			
		**********			
		< CAPACITOR >			
C402	1-124-902-00	ELECT	0.47uF	20% 50V	
C404	1-124-903-11	ELECT	1uF	20% 50V	
C406	1-124-903-11	ELECT	1uF	20% 50V	
C520	1-161-085-00	CERAMIC	4700PF	10% 50V	
C602	1-136-177-00	FILM	1uF	5% 50V	
C604	1-107-202-00	MICA	10PF	5% 500V	
C606	1-107-202-00	MICA	10PF	5% 500V	
C612	1-161-141-00	CERAMIC	0.001uF	10% 50V	
C614	1-161-141-00	CERAMIC	0.001uF	10% 50V	
C616	1-109-621-00	MICA	220PF	1% 500V	
C618	1-109-621-00	MICA	220PF	1% 500V	
C620	1-106-383-00	MYLAR	0.047uF	5% 200V	

Ref.No.	Part No.	Description			Remarks
C622	1-126-176-11	ELECT	220uF	20% 10V	
C624	1-124-907-11	ELECT	10uF	20% 50V	
C626	1-124-126-00	ELECT	47uF	20% 10V	
C628	1-124-910-11	ELECT	47uF	20% 50V	
C632	1-161-051-00	CERAMIC	0.01uF	10% 50V	
C634	1-124-902-00	ELECT	0.47uF	20% 50V	
C636	1-109-633-00	MICA	470PF	5% 500V	
C638	1-109-620-00	MICA	200PF	5% 500V	
C640	1-124-927-11	ELECT	4.7uF	20% 50V	
C642	1-124-927-11	ELECT	4.7uF	20% 50V	
		< DIODE >			
D402	8-719-901-83	DIODE	1SS83		
D410	8-719-901-83	DIODE	1SS83		
D602	8-719-970-02	DIODE	1SR139-400		
D604	8-719-970-02	DIODE	1SR139-400		
D606	8-719-901-83	DIODE	1SS83		
D608	8-719-901-83	DIODE	1SS83		
D610	8-719-901-83	DIODE	1SS83		
D612	8-719-901-83	DIODE	1SS83		
D616	8-719-970-02	DIODE	1SR139-400		
D617	8-719-970-02	DIODE	1SR139-400		
D619	8-719-970-02	DIODE	1SR139-400		
D622	8-719-901-83	DIODE	1SS83		
D802	8-719-160-77	DIODE	RD24FB1		
D804	8-719-160-77	DIODE	RD24FB1		
		< IC >			
IC602	8-759-602-01	IC	M5220P		
IC606	8-759-700-42	IC	NJM2904D		
IC608	8-759-111-68	IC	uPC1237HA		
		< COIL >			
L602	1-422-358-11	COIL, AIR-CORE			
		< TRANSISTOR >			
Q402	8-729-925-38	TRANSISTOR	2SD1189		
Q404	8-729-900-36	TRANSISTOR	DTC124ES		
Q406	8-729-900-36	TRANSISTOR	DTC124ES		
Q602	8-729-104-18	TRANSISTOR	2SC3514		
Q604	8-729-104-91	TRANSISTOR	2SA1383		
Q606	8-729-104-91	TRANSISTOR	2SA1383		
Q608	8-729-104-18	TRANSISTOR	2SC3514		
Q610	8-729-925-38	TRANSISTOR	2SD1189		
Q612	8-729-143-40	TRANSISTOR	2SC2002-L		
Q614	8-729-103-62	TRANSISTOR	2SA953-LA		
Q616	8-729-104-18	TRANSISTOR	2SC3514		
Q618	8-729-104-91	TRANSISTOR	2SA1383		
Q620	8-729-208-72	TRANSISTOR	2SC3298B-Y		

When indicating parts by reference number, please include the board.

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Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

FINAL(2)

Ref. No.	Part No.	Description	Remarks
Q622	8-729-208-75	TRANSISTOR 2SA1306B-Y	
Q624	8-729-010-97	(MU-A400)..TRANSISTOR 2SC3856	
Q626	8-729-303-86	(MU-A400)..TRANSISTOR 2SA1492-Y	
Q628	8-729-010-97	TRANSISTOR 2SC3856	
Q630	8-729-303-86	TRANSISTOR 2SA1492-Y	
Q632	8-729-010-97	TRANSISTOR 2SC3856	
Q634	8-729-303-86	TRANSISTOR 2SA1492-Y	
Q636	8-729-010-97	(MU-A400)..TRANSISTOR 2SC3856	
Q638	8-729-303-86	TRANSISTOR 2SA1492-Y	
Q640	8-729-010-97	TRANSISTOR 2SC3856	
Q642	8-729-303-86	(MU-A400)..TRANSISTOR 2SA1492-Y	
Q644	8-729-010-97	(MU-A400)..TRANSISTOR 2SC3856	
Q646	8-729-303-86	(MU-A400)..TRANSISTOR 2SA1492-Y	
Q648	8-729-117-07	TRANSISTOR 2SC3999-L	
Q650	8-729-117-43	TRANSISTOR 2SA1174	
Q802	8-729-104-18	TRANSISTOR 2SC3514	
Q804	8-729-104-91	TRANSISTOR 2SA1383	
		< RESISTOR >	
R402	1-249-437-11	CARBON 47K 5% 1/4W	
R404	1-249-408-11	CARBON 180 5% 1/4W	
R406	1-247-903-00	CARBON 1M 5% 1/4W	
R408	1-249-437-11	CARBON 47K 5% 1/4W	
R410	1-247-903-00	CARBON 1M 5% 1/4W	
R412	1-249-433-11	CARBON 22K 5% 1/4W	
R414	1-249-425-11	CARBON 4.7K 5% 1/4W	
R420	1-249-433-11	CARBON 22K 5% 1/4W	
R422	1-249-433-11	CARBON 22K 5% 1/4W	
R424	1-249-429-11	CARBON 10K 5% 1/4W	
R426	1-247-903-00	CARBON 1M 5% 1/4W	
R428	1-249-429-11	CARBON 10K 5% 1/4W	
R430	1-215-865-11	METAL 220 1% 1W	
R432	1-249-429-11	CARBON 10K 5% 1/4W	
R434	1-249-429-11	CARBON 10K 5% 1/4W	
R436	1-247-903-00	CARBON 1M 5% 1/4W	
R438	1-249-437-11	CARBON 47K 5% 1/4W	
R440	1-249-428-11	CARBON 8.2K 5% 1/4W	
R602	1-249-412-11	CARBON 390 5% 1/4W	
R604	1-249-425-11	CARBON 4.7K 5% 1/4W	
R606	1-247-887-00	CARBON 220K 5% 1/4W	
R608	1-249-413-11	CARBON 470 5% 1/4W	
R610	1-216-431-11	METAL 560 1% 1W	
⚠R612	1-215-893-11	METAL OXIDE 1.5K 5% 2W F	
R616	1-249-419-11	CARBON 1.5K 5% 1/4W	
R618	1-249-410-11	CARBON 270 5% 1/4W	
R620	1-249-410-11	CARBON 270 5% 1/4W	
R622	1-249-417-11	CARBON 1K 5% 1/4W	
⚠R624	1-215-876-00	METAL OXIDE 15K 5% 1W F	
R626	1-249-393-11	CARBON 10 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
R628	1-249-393-11	CARBON 10 5% 1/4W	
⚠R630	1-215-876-00	METAL OXIDE 15K 5% 1W F	
R632	1-249-412-11	CARBON 390 5% 1/4W	
R634	1-249-412-11	CARBON 390 5% 1/4W	
R636	1-249-419-11	CARBON 1.5K 5% 1/4W	
R638	1-249-410-11	CARBON 270 5% 1/4W	
R640	1-249-420-11	CARBON 1.8K 5% 1/4W	
⚠R644	1-212-897-00	FUSIBLE 470 5% 1/4W F	
⚠R646	1-212-881-11	FUSIBLE 100 5% 1/4W F	
⚠R648	1-212-881-11	FUSIBLE 100 5% 1/4W F	
⚠R650	1-212-889-00	FUSIBLE 220 5% 1/4W F	
⚠R652	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R654	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R656	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R658	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R660	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R662	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R664	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R666	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R668	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R670	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R672	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R674	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
R676	1-249-425-11	CARBON 4.7K 5% 1/4W	
R678	1-249-419-11	CARBON 1.5K 5% 1/4W	
R680	1-249-421-11	CARBON 2.2K 5% 1/4W	
R682	1-249-421-11	CARBON 2.2K 5% 1/4W	
⚠R684	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R686	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R688	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R688	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R690	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R690	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R692	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R692	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R694	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R694	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R696	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R698	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R698	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R802	1-216-455-11	METAL OXIDE 560 5% 2W F	
⚠R804	1-216-439-00	METAL OXIDE 12K 5% 1W F	
⚠R806	1-212-857-00	FUSIBLE 10 5% 1/4W F	
⚠R808	1-216-455-11	METAL OXIDE 560 5% 2W F	
⚠R810	1-216-439-00	METAL OXIDE 12K 5% 1W F	
⚠R812	1-212-857-00	FUSIBLE 10 5% 1/4W F	
⚠R6002	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R6002	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R6004	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	

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Replace only with part number specified.

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FINAL(2) INPUT(1)

Ref.No.	Part No.	Description				Remarks
⚠R6004	1-217-156-00	(MU-A200)..RES, METAL PLATE	0.22	5%	5W	
⚠R6006	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5%	5W	
⚠R6008	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5%	5W	
⚠R6010	1-215-880-11	METAL OXIDE	10	5%	2W	F
⚠R6012	1-215-880-11	METAL OXIDE	10	5%	2W	F
R6014	1-249-441-11	CARBON	100K	5%	1/4W	
R6016	1-249-428-11	CARBON	8.2K	5%	1/4W	
R6018	1-249-438-11	CARBON	56K	5%	1/4W	
R6021	1-249-424-11	CARBON	3.9K	5%	1/4W	
R6024	1-249-441-11	CARBON	100K	5%	1/4W	
R6026	1-249-415-11	CARBON	680	5%	1/4W	
R6030	1-249-425-11	CARBON	4.7K	5%	1/4W	
R6032	1-249-433-11	CARBON	22K	5%	1/4W	
R6034	1-249-437-11	CARBON	47K	5%	1/4W	
R6036	1-249-437-11	CARBON	47K	5%	1/4W	
R6038	1-249-437-11	CARBON	47K	5%	1/4W	
R6040	1-249-429-11	CARBON	10K	5%	1/4W	
		< RELAY >				
RL602	1-515-611-11	RELAY, MINI POWER				
RL603	1-515-890-11	RELAY				
		< THERMISTOR >				
TH602	1-806-064-11	POSISTOR(THERMAL PROTECT)				
TH604	1-800-427-00	POSISTOR(THERMAL PROTECT)				
		< VARIABLE RESISTOR >				
VR602	1-230-530-11	RES, ADJ, METAL GRAZE	100			
VR604	1-230-522-11	RES, ADJ, METAL GRAZE	4.7K			

****

*	A-4588-481-A	MOUNTED PCB, INPUT(1)				
		**********				
		< CAPACITOR >				
C501	1-130-789-00	FILM	1uF	5%	100V	
C502	1-130-789-00	FILM	1uF	5%	100V	
C503	1-130-789-00	FILM	1uF	5%	100V	
C504	1-130-789-00	FILM	1uF	5%	100V	
C505	1-107-169-00	MICA	100PF	5%	500V	
C506	1-107-169-00	MICA	100PF	5%	500V	
C507	1-107-210-00	MICA	22PF	5%	500V	
C508	1-107-210-00	MICA	22PF	5%	500V	
C509	1-107-210-00	MICA	22PF	5%	500V	
C510	1-107-210-00	MICA	22PF	5%	500V	
C511	1-130-789-00	FILM	1uF	5%	100V	
C512	1-130-789-00	FILM	1uF	5%	100V	
C513	1-130-789-00	FILM	1uF	5%	100V	
C514	1-130-789-00	FILM	1uF	5%	100V	
C515	1-107-163-00	MICA	47PF	5%	50V	
C516	1-107-163-00	MICA	47PF	5%	50V	
C517	1-107-163-00	MICA	47PF	5%	50V	
C518	1-107-163-00	MICA	47PF	5%	50V	
C519	1-161-149-51	CERAMIC	0.0047uF	10%	50V	
		< CONNECTOR >				
* CN501	1-563-080-11	CONNECTOR (RECEPTACLE) 3P (INPUT 1 BAL STACKING)				
* CN502	1-563-080-11	CONNECTOR (RECEPTACLE) 3P (INPUT 2 BAL STACKING)				
* CN503	1-566-852-11	CONNECTOR (RECEPTACLE) 3P(INPUT 1 BAL)				
* CN504	1-566-852-11	CONNECTOR (RECEPTACLE) 3P(INPUT 2 BAL)				
		< DIODE >				
D501	8-719-901-83	DIODE 1SS83				
D502	8-719-901-83	DIODE 1SS83				
D503	8-719-901-83	DIODE 1SS83				
D504	8-719-901-83	DIODE 1SS83				
D505	8-719-901-83	DIODE 1SS83				
D506	8-719-901-83	DIODE 1SS83				
D507	8-719-901-83	DIODE 1SS83				
D508	8-719-901-83	DIODE 1SS83				
		< IC >				
IC501	8-759-602-01	IC M5220P				
IC502	8-759-602-01	IC M5220P				
IC503	8-759-602-01	IC M5220P				
IC504	8-759-602-01	IC M5220P				
		< RESISTOR >				
R501	1-247-887-00	CARBON	220K	5%	1/4W	
R502	1-247-887-00	CARBON	220K	5%	1/4W	
R503	1-247-887-00	CARBON	220K	5%	1/4W	
R504	1-247-887-00	CARBON	220K	5%	1/4W	
R507	1-249-430-11	CARBON	12K	5%	1/4W	
R508	1-249-430-11	CARBON	12K	5%	1/4W	
R509	1-249-420-11	CARBON	1.8K	5%	1/4W	
R510	1-249-420-11	CARBON	1.8K	5%	1/4W	
R511	1-249-420-11	CARBON	1.8K	5%	1/4W	
R512	1-249-420-11	CARBON	1.8K	5%	1/4W	
R513	1-249-405-11	CARBON	100	5%	1/4W	
R514	1-249-405-11	CARBON	100	5%	1/4W	
R515	1-249-405-11	CARBON	100	5%	1/4W	
R516	1-249-405-11	CARBON	100	5%	1/4W	
R517	1-247-895-00	CARBON	470K	5%	1/4W	
R518	1-247-895-00	CARBON	470K	5%	1/4W	
R519	1-247-895-00	CARBON	470K	5%	1/4W	
R520	1-247-895-00	CARBON	470K	5%	1/4W	
R521	1-249-420-11	CARBON	1.8K	5%	1/4W	

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

INPUT(1) INPUT(2) INPUT(3) LED

Ref.No.	Part No.	Description			Remarks
R522	1-249-420-11	CARBON	1.8K	5%	1/4W
R523	1-249-420-11	CARBON	1.8K	5%	1/4W
R524	1-249-420-11	CARBON	1.8K	5%	1/4W
R525	1-249-425-11	CARBON	4.7K	5%	1/4W
R526	1-249-425-11	CARBON	4.7K	5%	1/4W
R527	1-249-425-11	CARBON	4.7K	5%	1/4W
R528	1-249-425-11	CARBON	4.7K	5%	1/4W
R529	1-249-425-11	CARBON	4.7K	5%	1/4W
R530	1-249-425-11	CARBON	4.7K	5%	1/4W
R531	1-249-425-11	CARBON	4.7K	5%	1/4W
R532	1-249-425-11	CARBON	4.7K	5%	1/4W
R533	1-249-417-11	CARBON	1K	5%	1/4W
R534	1-249-417-11	CARBON	1K	5%	1/4W
		< RELAY >			
RL501	1-515-890-11	RELAY			
**********					
*	1-642-604-11	PC BOARD, INPUT 2			
		**********			
		< JACK >			
JK502	1-691-945-11	JACK 2P (INPUT 1 UNBAL)			
		< RESISTOR >			
R506	1-247-887-00	CARBON	220K	5%	1/4W
		< SWITCH >			
SW502	1-692-127-11	SWITCH, SLIDE (INPUT 1 BAL/UNBAL)			
**********					
*	1-642-605-11	PC BOARD, INPUT 3			
		**********			
		< JACK >			
JK501	1-691-945-11	JACK 2P (INPUT 2 UNBAL)			
		< RESISTOR >			
R505	1-247-887-00	CARBON	220K	5%	1/4W
		< SWITCH >			
SW501	1-692-127-11	SWITCH, SLIDE (INPUT 2 BAL/UNBAL)			
SW503	1-692-129-11	SWITCH, SLIDE (OPERATION)			
**********					

Ref.No.	Part No.	Description			Remarks
*	1-642-606-11	PC BOARD, LED			
		**********			
		< CAPACITOR >			
C403	1-124-907-11	ELECT	10uF	20%	50V
C404	1-124-907-11	ELECT	10uF	20%	50V
C405	1-126-101-11	ELECT	100uF	20%	16V
		< LED >			
D411	8-719-312-20	LED SEL3410G (GRN) (CH1 OPERATION)			
D412	8-719-312-20	LED SEL3410G (GRN) (CH2 OPERATION)			
D413	8-719-812-31	LED TLR123 (RED) (CH1 CRIP)			
D414	8-719-812-31	LED TLR123 (RED) (CH2 CRIP)			
D415	8-719-812-31	LED TLR123 (RED) (CH1 HIGH TEMP)			
D416	8-719-812-31	LED TLR123 (RED) (CH2 HIGH TEMP)			
D417	8-719-812-31	LED TLR123 (RED) (CH1 PROTECTION)			
D418	8-719-812-31	LED TLR123 (RED) (CH2 PROTECTION)			
D419	8-719-918-96	LED AA3422S (ORG) (CH1 0.9W -21dB)			
D420	8-719-918-96	LED AA3422S (ORG) (CH2 0.9W -21dB)			
D421	8-719-918-96	LED AA3422S (ORG) (CH1 1.7W -18dB)			
D422	8-719-918-96	LED AA3422S (ORG) (CH2 1.7W -18dB)			
D423	8-719-918-96	LED AA3422S (ORG) (CH1 3.4W -15dB)			
D424	8-719-918-96	LED AA3422S (ORG) (CH2 3.4W -15dB)			
D425	8-719-918-96	LED AA3422S (ORG) (CH1 6.8W -12dB)			
D426	8-719-918-96	LED AA3422S (ORG) (CH2 6.8W -12dB)			
D427	8-719-918-96	LED AA3422S (ORG) (CH1 12.5W -9dB)			
D428	8-719-918-96	LED AA3422S (ORG) (CH2 12.5W -9dB)			
D429	8-719-918-96	LED AA3422S (ORG) (CH1 25W -6dB)			
D430	8-719-918-96	LED AA3422S (ORG) (CH2 25W -6dB)			
D431	8-719-918-96	LED AA3422S (ORG) (CH1 50W -3dB)			
D432	8-719-918-96	LED AA3422S (ORG) (CH2 50W -3dB)			
D433	8-719-918-96	LED AA3422S (ORG) (CH1 100W 0dB)			
D434	8-719-918-96	LED AA3422S (ORG) (CH2 100W 0dB)			
D435	8-719-918-96	LED AA3422S (ORG) (CH1 200W +3dB)			
D436	8-719-918-96	LED AA3422S (ORG) (CH2 200W +3dB)			
D437	8-719-812-31	LED TLR123 (RED) (CH1 400W +6dB)			
D438	8-719-812-31	LED TLR123 (RED) (CH2 400W +6dB)			
D439	8-719-312-20	LED SEL3410G (GRN) (POWER ON)			
		< IC >			
IC401	8-759-087-35	IC BA683A			
IC402	8-759-087-35	IC BA683A			
		< RESISTOR >			
R741	1-249-425-11	CARBON	4.7K	5%	1/4W
R442	1-249-425-11	CARBON	4.7K	5%	1/4W

When indicating parts by reference number, please include the board.

LED **POWER SUPPLY** **VR-1** **VR-2** **THERMAL PROTECTOR 1** **THERMAL PROTECTOR 2**

Ref. No.	Part No.	Description			Remarks
R445	1-249-428-11	CARBON	8.2K	5%	1/4W
R446	1-249-428-11	CARBON	8.2K	5%	1/4W
R447	1-249-441-11	CARBON	100K	5%	1/4W
R448	1-249-441-11	CARBON	100K	5%	1/4W
R449	1-249-429-11	CARBON	10K	5%	1/4W
R450	1-249-429-11	CARBON	10K	5%	1/4W
R451	1-249-421-11	CARBON	2.2K	5%	1/4W
*	1-642-575-11	PC BOARD, POWER SUPPLY			
		< CAPACITOR >			
C801	1-124-922-11	ELECT	1000uF	20%	63V
C802	1-124-907-11	ELECT	10uF	20%	50V
C803	1-124-907-11	ELECT	10uF	20%	50V
C805	1-124-443-00	ELECT	100uF	20%	6.3V
		< DIODE >			
D805	8-719-970-02	DIODE 1SR139-400			
D806	8-719-970-02	DIODE 1SR139-400			
D807	8-719-901-83	DIODE 1SS83			
		< FUSE >			
⚠F801	1-532-360-XX	FUSE, GLASS TUBE(100V 1A)			
*	1-533-185-11	HOLDER, FUSE			
⚠F802	1-532-360-XX	FUSE, GLASS TUBE(100V 1A)			
*	1-533-185-11	HOLDER, FUSE			
		< IC >			
IC801	8-759-701-83	IC NJM7824FA			
IC802	8-759-982-13	IC RC7812FA			
		< TRANSISTOR >			
Q805	8-729-900-36	TRANSISTOR DTC124ES			
		< RESISTOR >			
⚠R813	1-219-211-11	FUSIBLE(TEMPERATURE, 130°C) 1		10%	2.40W
⚠R814	1-217-160-00	RES, METAL PLATE	1.0		5W
⚠R815	1-217-160-00	RES, METAL PLATE	1.0		5W
⚠R816	1-217-160-00	RES, METAL PLATE	1.0		5W
⚠R817	1-217-160-00	RES, METAL PLATE	1.0		5W
R823	1-249-431-11	CARBON	15K	5%	1/4W
R824	1-249-431-11	CARBON	15K	5%	1/4W
R825	1-249-441-11	CARBON	100K	5%	1/4W
		< RELAY >			
⚠RL801	1-515-891-11	RELAY			

Ref. No.	Part No.	Description	Remarks
*	1-642-602-11	PC BOARD, VR-1	
		< VARIABLE RESISTOR >	
VR502	1-241-910-11	VARIABLE RESISTOR 10KA (CH1 ATTENUATOR)	
*	1-642-601-11	PC BOARD, VR-2	
		< VARIABLE RESISTOR >	
VR501	1-241-910-11	VARIABLE RESISTOR 10KA (CH2 ATTENUATOR)	
*	1-646-271-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 1	
		< THERMISTOR >	
TH603	1-880-427-00	POSISTOR(THERMAL PROTECT)	
*	1-646-272-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 2	
		< THERMISTOR >	
TH604	1-800-427-00	POSISTOR(THERMAL PROTECT)	
		MISCELLANEOUS	
203	1-533-210-11	HOLDER, FUSE	
C851	1-125-424-11	(MU-A400).. ELECT 18000uF 20% 100V	
C851	1-125-425-11	(MU-A200).. ELECT 18000uF 20% 71V	
C852	1-125-424-11	(MU-A400).. ELECT 18000uF 20% 100V	
C852	1-125-424-11	(MU-A200).. ELECT 18000uF 20% 71V	
⚠*CNJ851	1-580-375-21	INLET 3P (~ AC IN)	
D851	8-719-029-99	DIODE GBPC2504	
D852	8-719-029-99	DIODE GBPC2504	
EF851	1-541-974-11	FAN, ELECTRIC	
EF852	1-541-974-11	FAN, ELECTRIC	
⚠F851	1-576-258-00	(MU-A400)..FUSE, GLASS TUBE(250V 8A)	
⚠F851	1-532-350-00	(MU-A200)..FUSE, TIME-LAG (GLASSS TUBE) (250V 4A)	
⚠S851	1-571-649-11	SWITCH, PUSH (AC POWER)	
⚠T801	1-450-904-11	(MU-A200)..TRANSFORMER, POWER	
⚠T801	1-450-906-11	(MU-A400)..TRANSFORMER, POWER	

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
* TM801	1-537-125-11	TERMINAL BOARD	
TM851	1-536-961-11	TERMINAL(5-WAY)(OUTPUT 1)	
TM852	1-536-961-11	TERMINAL(5-WAY)(OUTPUT 2)	

****

ACCESSORIES & PACKING MATERIAL
****

⚠*	1-559-656-11	CORD, POWER	
	2-338-218-12	MANUAL, INSTRUCTION(ENGLISH, FRENCH, GERMAN)	
*	3-704-300-01	BAG(STANDARD), PROTECTION	
⚠	1-576-258-00	(MU-A400)..FUSE, GLASS TUBE(250V 8A)	
⚠	1-532-350-00	(MU-A200)..FUSE, TIME-LAG (GLASS TUBE) (250V 4A)	

****

****
HARDWARE LIST
****

#1	7-621-773-95	SCREW +B 2.6X6 (BLK)
#2	7-682-247-04	SCREW +K 3X6
#3	7-682-548-09	SCREW +B 3X8 (BLK)
#4	7-682-549-09	SCREW +B 3X10 (BLK)
#5	7-682-561-04	SCREW +B 4X8
#6	7-682-561-09	SCREW +B 4X8 (BLK)
#7	7-682-565-09	SCREW +B 4X16 (BLK)
#8	7-682-568-09	SCREW +B 4X30 (BLK)
#9	7-682-576-04	(MU-A400)..SCREW +B 5X12
#9	7-682-562-04	(MU-A200)..SCREW +B 4X10
#10	7-682-950-01	SCREW +PSW 3X12
#11	7-685-246-14	SCREW +KTP 3X8, TYPE 2 NON-SLIT
#12	7-685-645-79	SCREW +BVTP 3X6, TYPE 2, IT-3 (BLK)
#13	7-685-646-79	SCREW +BVTP 3X8, TYPE 2, IT-3 (BLK)
#14	7-685-648-79	SCREW +BVTP 3X12, TYPE 2, IT-3 (BLK)
#15	7-685-663-79	SCREW +BVTP 4X16, TYPE 2, IT-3 (BLK)
#16	7-685-903-11	SCREW +PTPWH 3X6 (TYPE 2)
#17	7-682-248-04	(MU-A200)..SCREW +K 3X8
#17	7-685-246-14	(MU-A400)..SCREW +KTP 3X8, TYPE 2 NON-SLIT
#21	7-623-212-22	SW5, TYPE 2
#22	7-623-422-07	LW3, TYPE B
#23	7-684-024-03	N4, TYPE 2
#24	7-684-023-04	(MU-A200)..N3, TYPE 2

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

9-977-904-11
3136

Sony Sound Tec Corporation

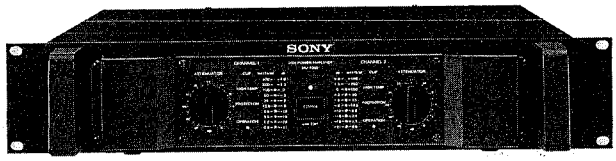
English
92H0204-1
Printed in Japan
©1992.8

MU-A200/A400

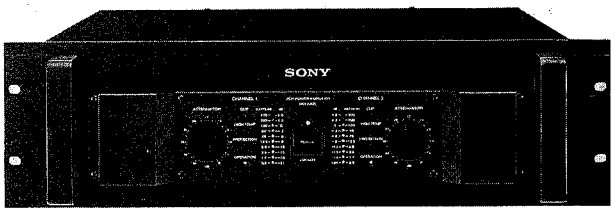
SERVICE MANUAL

AEP Model

BACKUP FILE



MU-A200



MU-A400

SPECIFICATIONS

Channel 2 channels
Input sensitivity 0dBs (100W +100W, 8 ohm load impedance, both channels driven simultaneously)

Input	Balanced	Unbalanced
Circuit	Electronic balanced circuit	
Input impedance	More than 33 kilo-ohms (stereo operation) More than 33 kilo-ohms (monaural operation)	
Connector and jack	XLR-3-31 type	XLR-3-31 type Phono type

Item	Stereo	Monaural (BTL)
Output terminal	Screw type binding terminal	
Rated output*	MU-A400	
	260 W + 260 W (8 ohms) 400 W + 400 W (4 ohms) (both channels driven simultaneously)	520 W (16 ohms) 800 W (8 ohms)
	MU-A200	
	130 W + 130 W (8 ohms) 200 W + 200 W (4 ohms) (both channels driven simultaneously)	260 W (16 ohms) 400 W (8 ohms)
Power bandwidth	20 Hz - 20 kHz ± 0.5 dB	
Damping factor	More than 150 (8 ohms, 1kHz)	—
Harmonic distortion	Less than 0.1 % (8 ohms, at 100 W output)	Less than 0.1 % (8 ohms, at 200 W output)
Channel separation	More than 70 dB (1kHz: 8 ohms load, at rated output)	—
Residual noise	Less than 100 µV (IHF-A, input terminated)	Less than 200 µV (IHF-A, input terminated)
Gain (max.)	31 dB	37 dB
Stacking output connector	XLR-3-32 type	

0 dBs= 0.775 V
*1 % harmonic distortion at 1kHz

Indicator 10-point LED level meter
PROTECTION indicator
HIGH TEMP indicator
CLIP indicator
POWER indicator

Power requirements 220 - 240 V AC, 50/60 Hz
Power consumption MU-A400: 805 W
MU-A200: 425 W

Dimensions MU-A400:
Approx. 482 x 146 x 490 mm (w/h/d)
(19 x 4 3/4 x 19 3/8 inches)
MU-A200:
Approx. 482 x 102 x 490 mm (w/h/d)
(19 x 4 1/8 x 19 3/8 inches)

Weight MU-A400: Approx. 20.5 kg (45 lbs 2 oz)
MU-A200: Approx. 15 kg (33 lbs 2 oz)

Accessories supplied AC power cord (1)
Fuse MU-A400: 8A (1)
MU-A200: 4A (1)

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Design and specifications are subject to change without notice.

MICROFILM

PROFESSIONAL POWER AMPLIFIER

SONY®

TABLE OF CONTENTS

Section *Title* *Page*

SPECIFICATIONS 1

1. GENERAL
Precautions 3
Dimensions 3
Location and Function of Controls 4
Connection Examples 6

2. ADJUSTMENTS 7

3. DIAGRAMS
3-1. Block Diagram 8
3-2. Circuit Board Location 8
3-3. Semiconductor Lead Layouts 9
3-4. Printed Wiring Boards – PRE AMP Section – (MU-A200/A400 : Identical) 11
3-5. Schematic Diagram – PRE AMP Section – (MU-A200/A400 : Identical) 13
3-6. Printed Wiring Boards – MAIN AMP Section – (MU-A200/A400 : Common) 16
3-7. Schematic Diagram – MAIN AMP Section – (MU-A200) 19
3-8. Printed Wiring Boards – MAIN AMP Section – (MU-A200/A400 : Common) 22
3-9. Schematic Diagram – MAIN AMP Section – (MU-A400) 25

4. EXPLODED VIEWS
4-1. Outer External Section 28
4-2. Main Section 29
4-3. Front Panel Section 30
4-4. Main Chassis Section 31
4-5. Back Panel Section 32

5. ELECTRICAL PARTS LIST 33

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

NOTICE FOR THE CUSTOMERS IN THE UNITED KINGDOM
THIS APPARATUS MUST BE EARTHED

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:
Green-and-yellow: Earth
Blue: Neutral
Brown: Live
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Precautions

On Installation

Avoid installing or leaving the unit in a location:

- near heat sources such as radiators, airducts or heaters
- subject to direct sunlight
- exposed to rain or moisture
- where it is unventilated
- exposed to excess dust or dirt
- subject to mechanical vibration or shock

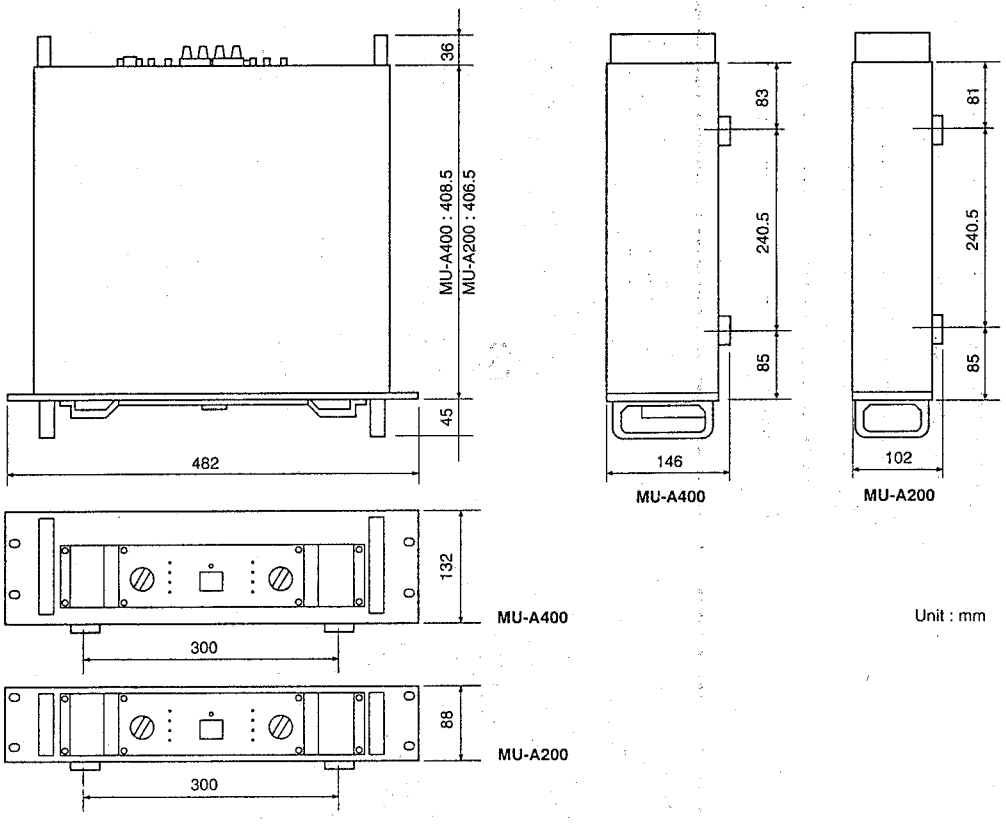
On Operation

- Operate the unit only on 220-240 V AC, 50/60 Hz.
- Unplug the unit from the wall outlet when it is not to be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never take out the plug by pulling on the cord.
- Should any solid object or liquid fall into the component, unplug the unit and have it checked by qualified personnel before using it again.
- Clean the cabinet, panel and knobs periodically using a soft cloth moistened with a mild detergent. Never use an abrasive cleanser or chemical solvents as they may mar the finish.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

3

Dimensions

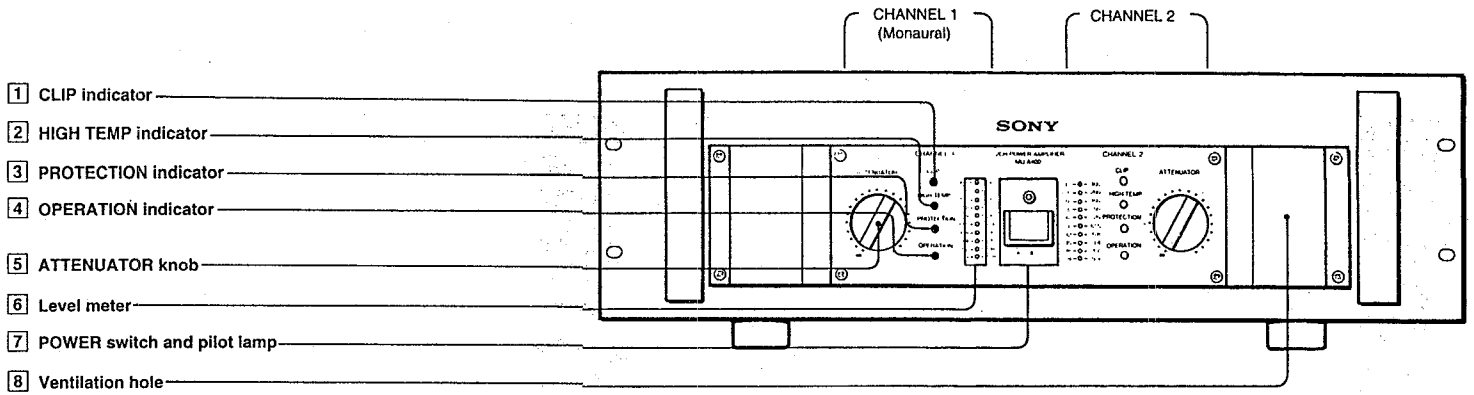


Unit : mm

5

Location and Function of Controls

Front Panel



CHANNEL 1 and CHANNEL 2 have the same function.

1 CLIP indicator (red)
Lights when the output wave is distorted. When the indicator lights frequently, the input level is too high or there is a problem in the input channel.

2 HIGH TEMP(temperature) indicator (red)
Lights when the temperature of the heat sink becomes too high. Take a measure to be well ventilated.

3 PROTECTION indicator (red)
Lights when the protection circuit is working. When you turn on the amplifier, the indicator lights but goes off when the unit starts to work steadily.

4 OPERATION indicator (green)
Shows the operation mode set by the position of the OPERATION switch on the rear panel.

Position of the OPERATION switch	OPERATION indicator		Operation mode
	CHANNEL 1	CHANNEL 2	
STEREO	Lights	Lights	Stereo
SAME OUT	Lights	Lights	CHANNEL 2 has the same signal as CHANNEL 1. (monaural)
MONO	Lights	Out	Monaural through BTL

5 ATTENUATOR knob
CHANNEL 1 (MONO): Turn this knob to control the channel 1 input level. You can control the input level with this knob when you are using the unit as a monaural amplifier through BTL.
CHANNEL 2: Turn this knob to control the channel 2 input level. When you set the OPERATION switch on the rear panel to MONO, this knob does not function.

Note
When you set the OPERATION switch on the rear panel to SAME OUT, CHANNEL 1 and CHANNEL 2 are connected (stacking connection). You can control the channel 1 input level with the ATTENUATOR knob on the CHANNEL 1 side, and the channel 2 input level with the ATTENUATOR knob on the CHANNEL 2 side.

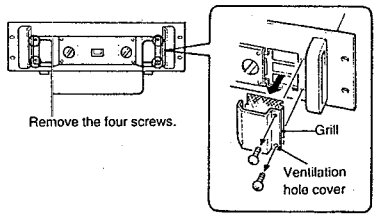
6 Level meter
The 10-point LED level meter shows 0dB at 8 ohms load, 100 W output.

7 POWER switch and pilot lamp (green)
Press this switch to turn on the amplifier. The pilot lamp lights when the unit is turned on.

8 Ventilation hole
Two ventilation holes with a fan are located on both sides of the front panel. The holes are covered with a grill and a cover. When the grills become dusty, the fans do not work properly and the HIGH TEMP indicator starts to light frequently. In this case, remove the ventilation hole cover and clean the grill. Unplug the AC power cord before cleaning the grill.

Caution
Do not touch the interior of the unit when you remove the grill.

To remove the ventilation hole cover

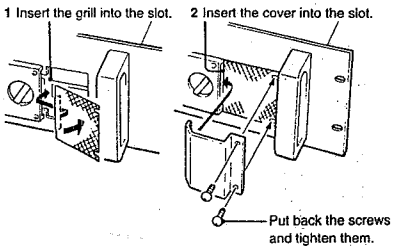


Notes on the PROTECTION lamp

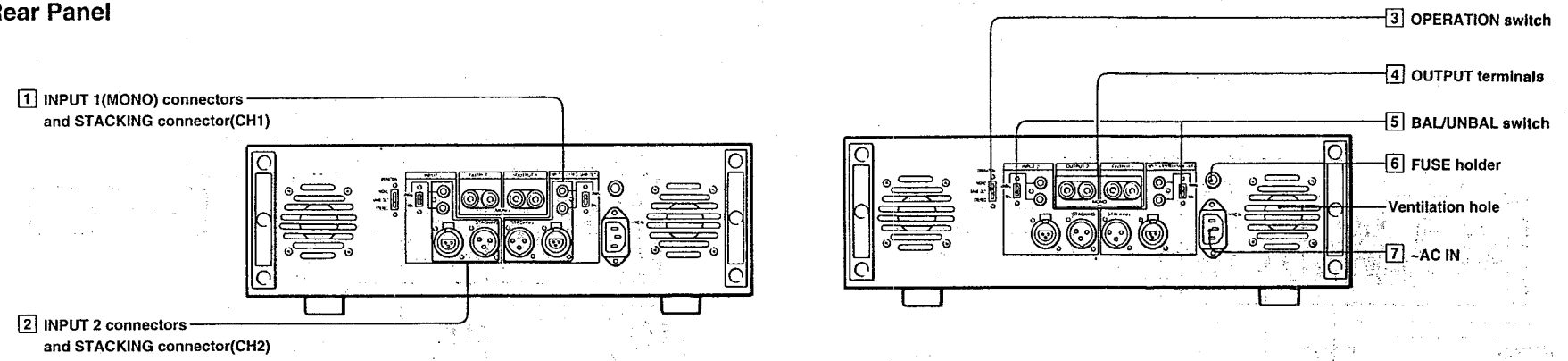
When does the PROTECTION lamp light?
The PROTECTION lamp lights when the protection circuit functions to protect the speakers and the amplifier by cutting off the output in the following cases:
- when DC (direct current) runs through the OUTPUT connectors because of a malfunction of the amplifier.
- when the radiator located in the amplifier exceeds the normal temperature (the HIGH TEMP indicator lights continuously).
- when the impedance of the speaker is too low, or when the output is terminated.

In these cases, turn off the POWER switch, find the cause and resolve the problem. Then turn on the POWER switch to operate the amplifier.

To put back the grill and the cover



Rear Panel



1 INPUT(MONO) (input 1, monaural) and STACKING connectors
Connect outputs of a mixer or preamplifier.
When you are using the unit as a stereo amplifier, these input connectors are for CHANNEL 1. When you set the OPERATION switch to SAME OUT or MONO, these connectors accept monaural input signals.

INPUT connector (XLR-3-31 type): Accepts balanced input when you set the BAL/UNBAL switch to BAL. When you set the switch to UNBAL, the connector accepts unbalanced input (Number 2: HOT).

INPUT jacks (phono type, unbalanced): Accept unbalanced signals when you set the BAL/UNBAL switch to UNBAL. Use one jack for input, another to connect another amplifier for stacking connection.

STACKING connector (XLR-3-32 type): Feeds out the signal which is received from the XLR type INPUT connector. Use this connector to connect another amplifier for stacking connection.

2 INPUT (input 2) and STACKING connectors
Connect outputs of a mixer or preamplifier.
When you are using the unit as a stereo amplifier, these input connectors are for CHANNEL 2. When you set the OPERATION switch to SAME OUT or MONO, these connectors are disconnected.

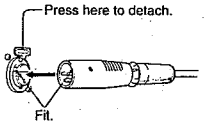
INPUT connector (XLR-3-31 type): Accepts balanced input when you set the BAL/UNBAL switch to BAL. When you set the switch to UNBAL, the connector accepts unbalanced input (Number 2: HOT).

INPUT jacks (phono type, unbalanced): Accept unbalanced signals when you set the BAL/UNBAL switch to UNBAL. Use one jack for input, another to connect another amplifier for stacking connection.

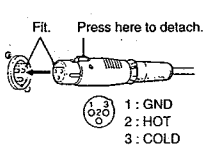
STACKING connector (XLR-3-32 type): Feeds out the signal which is received from the XLR type INPUT connector. Use this connector to connect another amplifier for stacking connection.

BAL/UNBAL switch	INPUT 1 (MONO) /INPUT 2 connectors	
BAL	XLR type connector	
	1 : GND 2 : HOT 3 : COLD	1 : GND 2 : HOT 3 : GND
UNBAL	Phono type jack	

XLR-3-12C type



XLR-3-11C type



3 OPERATION switch
Changes the operation mode of the unit as follows.

OPERATION switch	Operation mode
STEREO	Stereo
SAME OUT	Internal stacking operation CHANNEL 2 has the same signal as the CHANNEL 1 input signal.
BTL	Monaural operation through BTL.

Select the position of this switch when the POWER switch is turned off.

4 OUTPUT terminals
Connect speakers. Connect the + speaker terminal to the red terminal, – speaker terminal to the black terminal.
When the unit is on monaural operation through BTL, use only the red terminals. Connect the + speaker terminal to the red terminal on the OUTPUT 1 side, – speaker terminal to the red terminal on the OUTPUT 2 side.

Rack Mounting

By using the mounting parts on both sides, you can install the unit in an EIA standard 19-inch rack.
If you install various pieces of equipment one upon another, remove the unit's bottom support. To remove, pull out the screws of the supports, by using a screwdriver.

5 BAL/UNBAL (balanced/unbalanced) switch
When you set the switch to BAL, the unit feeds in the input signal from the source connected to the XLR type INPUT connector.
When you set the switch to UNBAL, the unit feeds in the input signal from the source connected to the XLR type INPUT connector* or to the phono type INPUT jacks. You can make a stacking connection with another amplifier since these input connectors are in parallel connection.
* In this case, the XLR type INPUT connector accepts unbalanced input (Number 2: HOT).

6 FUSE holder
There is a fuse to prevent damage from excessive current. Current capacity is 8A for the MU-A400 and 4A for the MU-A200. When you replace the fuse, be sure to use one with the same capacity.

7 ~AC IN (inlet)
Connect the AC power cord supplied. The unit operates on 220-240V AC, 50/60 Hz.

Connection Examples

Connection Notes

On power sources

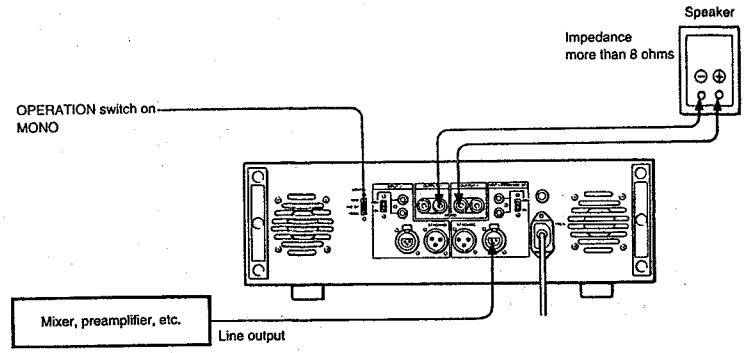
To avoid damaging the unit or to prevent the circuit breaker from working accidentally:

- Use an extension cord that can bear 10A current.
- Do not connect many pieces of equipment to the same AC outlet.

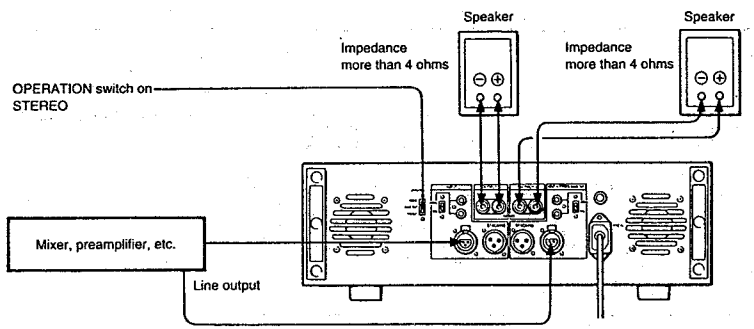
On connecting cables

- The power cord should be connected last. First make sure that the POWER switch is turned off.
- The cable connectors should be fully inserted into the jacks. A loose connection may cause hum and noise.
- Unplug the cord from the wall outlet by grasping the plug. Never take out the plug by pulling on the cord.

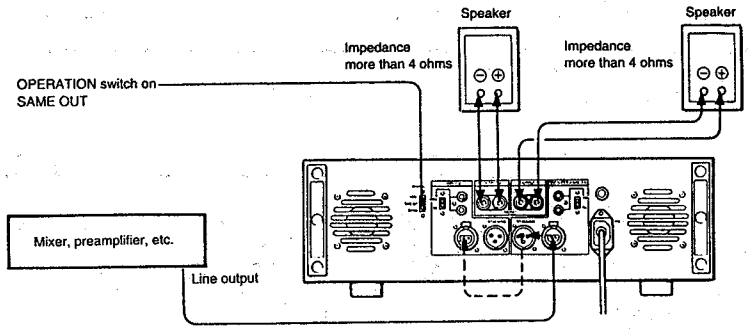
Using the Unit as a Monaural Amplifier through BTL



Using the Unit as a Stereo Amplifier



Using the Unit with Internal Stacking Connections



SECTION 2
ADJUSTMENTS

[Preparation]

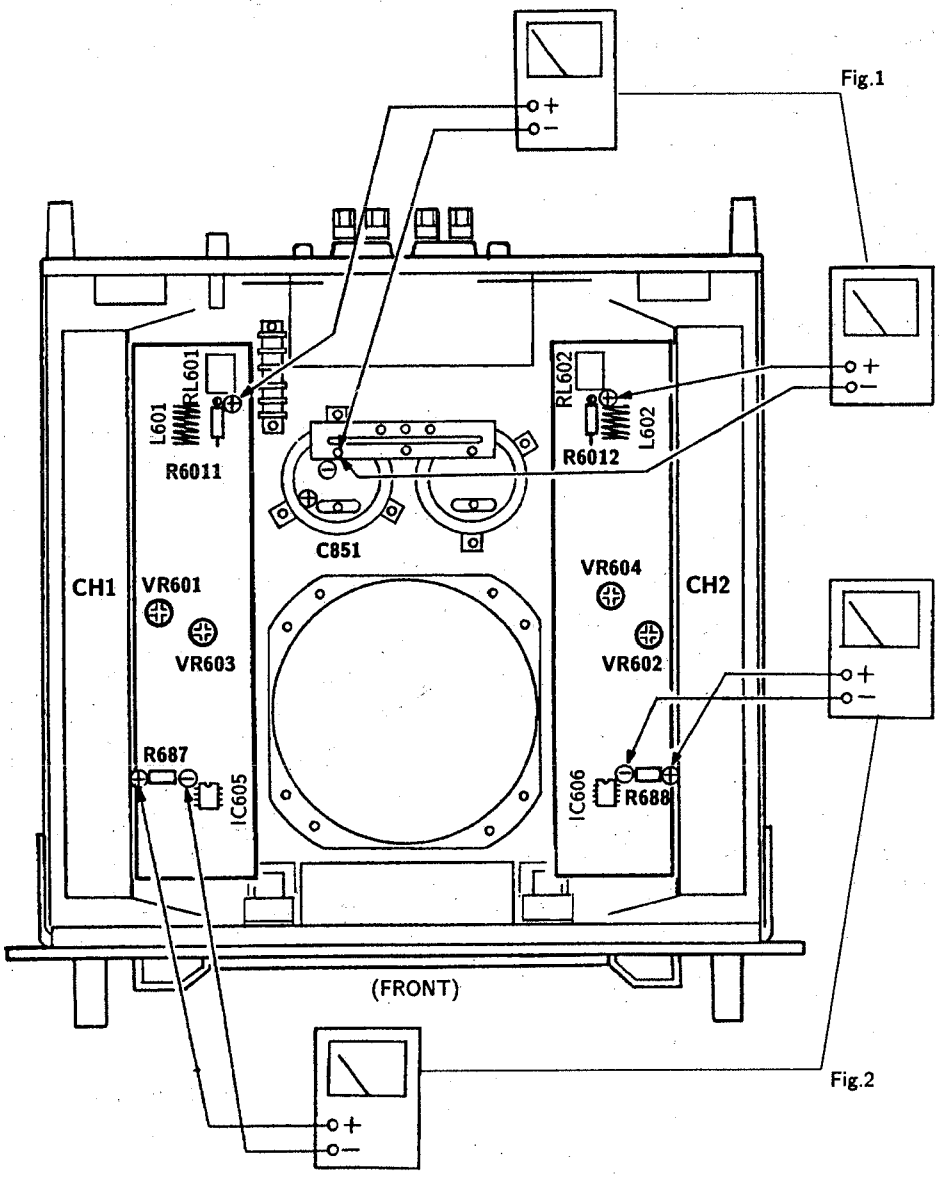
1. Turn the semi-final resistors from VR601 to VR604 and set at the mechanical center position.
2. The following adjustment must be done a five minutes passed after the power on.

[Offset Adujustment]

1. Connect the multi-voltage meter to the resistor R6011 (or R6012) and minus terminal of C851 at none signal input condition as shown in fig.1.
2. Adjust the semi-final resistor VR603(or VR604) to zero volt.

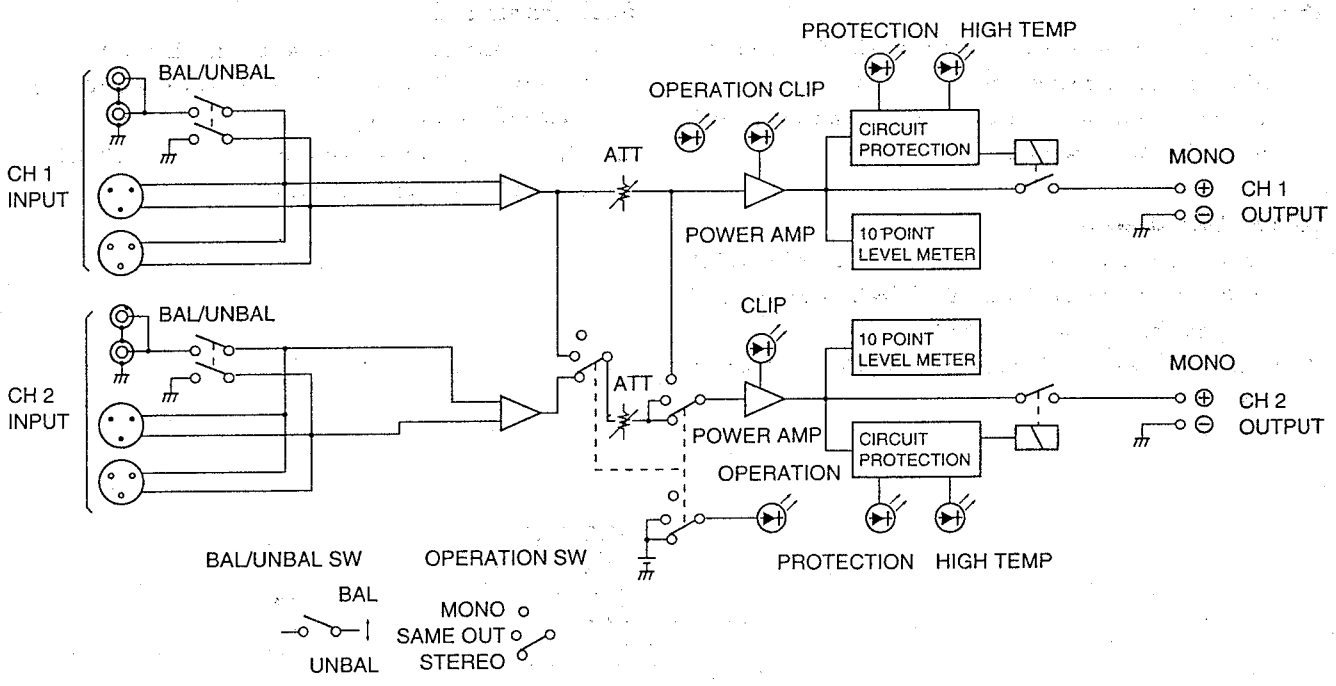
[Bias Adjustment]

1. Connect the multi-voltage meter to the both side of the resistor R687(or R688) at none signal input condition as shown in fig.2.
2. Adjust the semi-final resistor VR601(or VR602) and set the bias voltage from 2 to 5 mV.

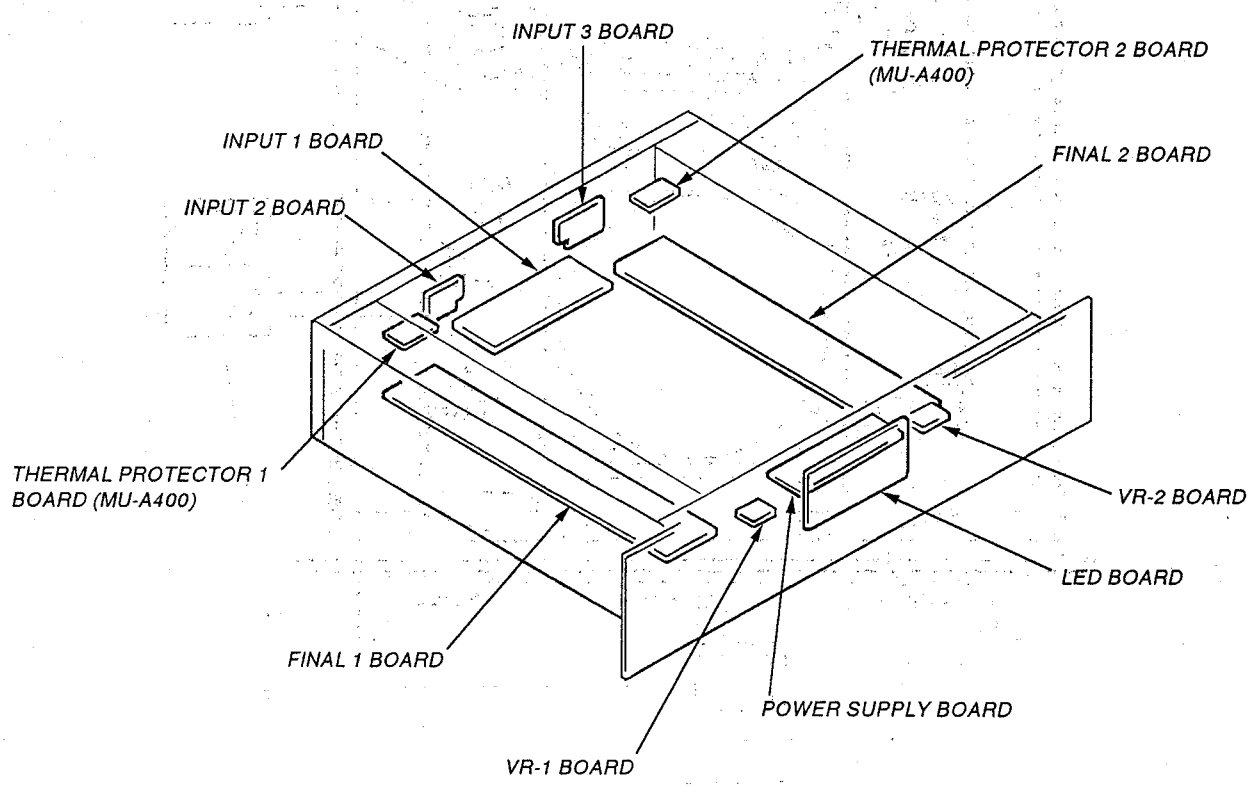


SECTION 3
DIAGRAMS

3-1. BLOCK DIAGRAM



3-2. CIRCUIT BOARD LOCATION



FINAL(1) FINAL(2)

Ref.No.	Part No.	Description			Remarks
⚠R6001	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6001	1-217-156-00	(MU-A200)..RES, METAL PLATE	0.22	5W	
⚠R6003	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6005	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6007	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5W	
⚠R6009	1-215-880-00	METAL OXIDE	10	5% 2W F	
⚠R6011	1-215-880-00	METAL OXIDE	10	5% 2W F	
R6013	1-249-441-11	CARBON	100K	5% 1/4W	
R6015	1-249-428-11	CARBON	8.2K	5% 1/4W	
R6017	1-249-438-11	CARBON	56K	5% 1/4W	
R6019	1-249-416-11	CARBON	820	5% 1/4W	
R6023	1-249-441-11	CARBON	100K	5% 1/4W	
R6025	1-249-415-11	CARBON	680	5% 1/4W	
R6027	1-249-441-11	CARBON	100K	5% 1/4W	
R6029	1-249-417-11	CARBON	1K	5% 1/4W	
R6031	1-249-433-11	CARBON	22K	5% 1/4W	
R6033	1-249-437-11	CARBON	47K	5% 1/4W	
R6035	1-249-437-11	CARBON	47K	5% 1/4W	
R6037	1-249-437-11	CARBON	47K	5% 1/4W	
R6039	1-249-429-11	CARBON	10K	5% 1/4W	
		< RELAY >			
RL601	1-515-611-11	RELAY, MINI POWER			
		< THERMISTOR >			
TH601	1-806-064-11	POSISTOR(THERMAL PROTECT)			
TH603	1-800-427-00	POSISTOR(THERMAL PROTECT)			
		< VARIABLE RESISTOR >			
VR601	1-230-530-11	RES, ADJ, METAL GRAZE	100		
VR603	1-230-522-11	RES, ADJ, METAL GRAZE	4.7K		
**********					
*	A-4588-485-A	MOUNTED PCB, FINAL(2)			
		**********			
		< CAPACITOR >			
C402	1-124-902-00	ELECT	0.47uF	20% 50V	
C404	1-124-903-11	ELECT	1uF	20% 50V	
C406	1-124-903-11	ELECT	1uF	20% 50V	
C520	1-161-085-00	CERAMIC	4700PF	10% 50V	
C602	1-136-177-00	FILM	1uF	5% 50V	
C604	1-107-202-00	MICA	10PF	5% 500V	
C606	1-107-202-00	MICA	10PF	5% 500V	
C612	1-161-141-00	CERAMIC	0.001uF	10% 50V	
C614	1-161-141-00	CERAMIC	0.001uF	10% 50V	
C616	1-109-621-00	MICA	220PF	1% 500V	
C618	1-109-621-00	MICA	220PF	1% 500V	
C620	1-106-383-00	MYLAR	0.047uF	5% 200V	

Ref.No.	Part No.	Description			Remarks
C622	1-126-176-11	ELECT	220uF	20% 10V	
C624	1-124-907-11	ELECT	10uF	20% 50V	
C626	1-124-126-00	ELECT	47uF	20% 10V	
C628	1-124-910-11	ELECT	47uF	20% 50V	
C632	1-161-051-00	CERAMIC	0.01uF	10% 50V	
C634	1-124-902-00	ELECT	0.47uF	20% 50V	
C636	1-109-633-00	MICA	470PF	5% 500V	
C638	1-109-620-00	MICA	200PF	5% 500V	
C640	1-124-927-11	ELECT	4.7uF	20% 50V	
C642	1-124-927-11	ELECT	4.7uF	20% 50V	
		< DIODE >			
D402	8-719-901-83	DIODE	1SS83		
D410	8-719-901-83	DIODE	1SS83		
D602	8-719-970-02	DIODE	1SR139-400		
D604	8-719-970-02	DIODE	1SR139-400		
D606	8-719-901-83	DIODE	1SS83		
D608	8-719-901-83	DIODE	1SS83		
D610	8-719-901-83	DIODE	1SS83		
D612	8-719-901-83	DIODE	1SS83		
D616	8-719-970-02	DIODE	1SR139-400		
D617	8-719-970-02	DIODE	1SR139-400		
D619	8-719-970-02	DIODE	1SR139-400		
D622	8-719-901-83	DIODE	1SS83		
D802	8-719-160-77	DIODE	RD24FB1		
D804	8-719-160-77	DIODE	RD24FB1		
		< IC >			
IC602	8-759-602-01	IC	M5220P		
IC606	8-759-700-42	IC	NJM2904D		
IC608	8-759-111-68	IC	uPC1237HA		
		< COIL >			
L602	1-422-358-11	COIL, AIR-CORE			
		< TRANSISTOR >			
Q402	8-729-925-38	TRANSISTOR	2SD1189		
Q404	8-729-900-36	TRANSISTOR	DTC124ES		
Q406	8-729-900-36	TRANSISTOR	DTC124ES		
Q602	8-729-104-18	TRANSISTOR	2SC3514		
Q604	8-729-104-91	TRANSISTOR	2SA1383		
Q606	8-729-104-91	TRANSISTOR	2SA1383		
Q608	8-729-104-18	TRANSISTOR	2SC3514		
Q610	8-729-925-38	TRANSISTOR	2SD1189		
Q612	8-729-143-40	TRANSISTOR	2SC2002-L		
Q614	8-729-103-62	TRANSISTOR	2SA953-LA		
Q616	8-729-104-18	TRANSISTOR	2SC3514		
Q618	8-729-104-91	TRANSISTOR	2SA1383		
Q620	8-729-208-72	TRANSISTOR	2SC3298B-Y		

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

FINAL(2)

Ref. No.	Part No.	Description	Remarks
Q622	8-729-208-75	TRANSISTOR 2SA1306B-Y	
Q624	8-729-010-97	(MU-A400)..TRANSISTOR 2SC3856	
Q626	8-729-303-86	(MU-A400)..TRANSISTOR 2SA1492-Y	
Q628	8-729-010-97	TRANSISTOR 2SC3856	
Q630	8-729-303-86	TRANSISTOR 2SA1492-Y	
Q632	8-729-010-97	TRANSISTOR 2SC3856	
Q634	8-729-303-86	TRANSISTOR 2SA1492-Y	
Q636	8-729-010-97	(MU-A400)..TRANSISTOR 2SC3856	
Q638	8-729-303-86	TRANSISTOR 2SA1492-Y	
Q640	8-729-010-97	TRANSISTOR 2SC3856	
Q642	8-729-303-86	(MU-A400)..TRANSISTOR 2SA1492-Y	
Q644	8-729-010-97	(MU-A400)..TRANSISTOR 2SC3856	
Q646	8-729-303-86	(MU-A400)..TRANSISTOR 2SA1492-Y	
Q648	8-729-117-07	TRANSISTOR 2SC3999-L	
Q650	8-729-117-48	TRANSISTOR 2SA1174	
Q802	8-729-104-18	TRANSISTOR 2SC3514	
Q804	8-729-104-91	TRANSISTOR 2SA1383	
		< RESISTOR >	
R402	1-249-437-11	CARBON 47K 5% 1/4W	
R404	1-249-408-11	CARBON 180 5% 1/4W	
R406	1-247-903-00	CARBON 1M 5% 1/4W	
R408	1-249-437-11	CARBON 47K 5% 1/4W	
R410	1-247-903-00	CARBON 1M 5% 1/4W	
R412	1-249-433-11	CARBON 22K 5% 1/4W	
R414	1-249-425-11	CARBON 4.7K 5% 1/4W	
R420	1-249-433-11	CARBON 22K 5% 1/4W	
R422	1-249-433-11	CARBON 22K 5% 1/4W	
R424	1-249-429-11	CARBON 10K 5% 1/4W	
R426	1-247-903-00	CARBON 1M 5% 1/4W	
R428	1-249-429-11	CARBON 10K 5% 1/4W	
R430	1-215-865-11	METAL 220 1% 1W	
R432	1-249-429-11	CARBON 10K 5% 1/4W	
R434	1-249-429-11	CARBON 10K 5% 1/4W	
R436	1-247-903-00	CARBON 1M 5% 1/4W	
R438	1-249-437-11	CARBON 47K 5% 1/4W	
R440	1-249-428-11	CARBON 8.2K 5% 1/4W	
R602	1-249-412-11	CARBON 390 5% 1/4W	
R604	1-249-425-11	CARBON 4.7K 5% 1/4W	
R606	1-247-887-00	CARBON 220K 5% 1/4W	
R608	1-249-413-11	CARBON 470 5% 1/4W	
R610	1-216-431-11	METAL 560 1% 1W	
⚠R612	1-215-893-11	METAL OXIDE 1.5K 5% 2W F	
R616	1-249-419-11	CARBON 1.5K 5% 1/4W	
R618	1-249-410-11	CARBON 270 5% 1/4W	
R620	1-249-410-11	CARBON 270 5% 1/4W	
R622	1-249-417-11	CARBON 1K 5% 1/4W	
⚠R624	1-215-876-00	METAL OXIDE 15K 5% 1W F	
R626	1-249-393-11	CARBON 10 5% 1/4W	

Ref. No.	Part No.	Description	Remarks
R628	1-249-393-11	CARBON 10 5% 1/4W	
⚠R630	1-215-876-00	METAL OXIDE 15K 5% 1W F	
R632	1-249-412-11	CARBON 390 5% 1/4W	
R634	1-249-412-11	CARBON 390 5% 1/4W	
R636	1-249-419-11	CARBON 1.5K 5% 1/4W	
R638	1-249-410-11	CARBON 270 5% 1/4W	
R640	1-249-420-11	CARBON 1.8K 5% 1/4W	
⚠R644	1-212-897-00	FUSIBLE 470 5% 1/4W F	
⚠R646	1-212-881-11	FUSIBLE 100 5% 1/4W F	
⚠R648	1-212-881-11	FUSIBLE 100 5% 1/4W F	
⚠R650	1-212-889-00	FUSIBLE 220 5% 1/4W F	
⚠R652	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R654	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R656	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R658	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R660	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R662	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R664	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R666	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R668	1-217-637-00	FUSIBLE 1 5% 1/4W F	
⚠R670	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R672	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
⚠R674	1-217-637-00	(MU-A400)..FUSIBLE 1 5% 1/4W F	
R676	1-249-425-11	CARBON 4.7K 5% 1/4W	
R678	1-249-419-11	CARBON 1.5K 5% 1/4W	
R680	1-249-421-11	CARBON 2.2K 5% 1/4W	
R682	1-249-421-11	CARBON 2.2K 5% 1/4W	
⚠R684	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R686	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R688	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R688	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R690	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R690	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R692	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R692	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R694	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R694	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R696	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R698	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R698	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R802	1-216-455-11	METAL OXIDE 560 5% 2W F	
⚠R804	1-216-439-00	METAL OXIDE 12K 5% 1W F	
⚠R806	1-212-857-00	FUSIBLE 10 5% 1/4W F	
⚠R808	1-216-455-11	METAL OXIDE 560 5% 2W F	
⚠R810	1-216-439-00	METAL OXIDE 12K 5% 1W F	
⚠R812	1-212-857-00	FUSIBLE 10 5% 1/4W F	
⚠R6002	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	
⚠R6002	1-217-156-00	(MU-A200)..RES, METAL PLATE 0.22 5W	
⚠R6004	1-202-959-11	(MU-A400)..RES, METAL PLATE 0.39 5W	

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

FINAL(2) INPUT(1)

Ref.No.	Part No.	Description				Remarks
⚠R6004	1-217-156-00	(MU-A200)..RES, METAL PLATE	0.22	5%	5W	
⚠R6006	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5%	5W	
⚠R6008	1-202-959-11	(MU-A400)..RES, METAL PLATE	0.39	5%	5W	
⚠R6010	1-215-880-11	METAL OXIDE	10	5%	2W	F
⚠R6012	1-215-880-11	METAL OXIDE	10	5%	2W	F
R6014	1-249-441-11	CARBON	100K	5%	1/4W	
R6016	1-249-428-11	CARBON	8.2K	5%	1/4W	
R6018	1-249-438-11	CARBON	56K	5%	1/4W	
R6021	1-249-424-11	CARBON	3.9K	5%	1/4W	
R6024	1-249-441-11	CARBON	100K	5%	1/4W	
R6026	1-249-415-11	CARBON	680	5%	1/4W	
R6030	1-249-425-11	CARBON	4.7K	5%	1/4W	
R6032	1-249-433-11	CARBON	22K	5%	1/4W	
R6034	1-249-437-11	CARBON	47K	5%	1/4W	
R6036	1-249-437-11	CARBON	47K	5%	1/4W	
R6038	1-249-437-11	CARBON	47K	5%	1/4W	
R6040	1-249-429-11	CARBON	10K	5%	1/4W	
		< RELAY >				
RL602	1-515-611-11	RELAY, MINI POWER				
RL603	1-515-890-11	RELAY				
		< THERMISTOR >				
TH602	1-806-064-11	POSISTOR(THERMAL PROTECT)				
TH604	1-800-427-00	POSISTOR(THERMAL PROTECT)				
		< VARIABLE RESISTOR >				
VR602	1-230-530-11	RES, ADJ, METAL GRAZE	100			
VR604	1-230-522-11	RES, ADJ, METAL GRAZE	4.7K			

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*	A-4588-481-A	MOUNTED PCB, INPUT(1)				
		**********				
		< CAPACITOR >				
C501	1-130-789-00	FILM	1uF	5%	100V	
C502	1-130-789-00	FILM	1uF	5%	100V	
C503	1-130-789-00	FILM	1uF	5%	100V	
C504	1-130-789-00	FILM	1uF	5%	100V	
C505	1-107-169-00	MICA	100PF	5%	500V	
C506	1-107-169-00	MICA	100PF	5%	500V	
C507	1-107-210-00	MICA	22PF	5%	500V	
C508	1-107-210-00	MICA	22PF	5%	500V	
C509	1-107-210-00	MICA	22PF	5%	500V	
C510	1-107-210-00	MICA	22PF	5%	500V	
C511	1-130-789-00	FILM	1uF	5%	100V	
C512	1-130-789-00	FILM	1uF	5%	100V	
C513	1-130-789-00	FILM	1uF	5%	100V	
C514	1-130-789-00	FILM	1uF	5%	100V	
C515	1-107-163-00	MICA	47PF	5%	500V	
C516	1-107-163-00	MICA	47PF	5%	500V	
C517	1-107-163-00	MICA	47PF	5%	500V	
C518	1-107-163-00	MICA	47PF	5%	500V	
C519	1-161-149-51	CERAMIC	0.0047uF	10%	50V	
		< CONNECTOR >				
* CN501	1-563-080-11	CONNECTOR (RECEPTACLE) 3P (INPUT 1 BAL STACKING)				
* CN502	1-563-080-11	CONNECTOR (RECEPTACLE) 3P (INPUT 2 BAL STACKING)				
* CN503	1-566-852-11	CONNECTOR (RECEPTACLE) 3P(INPUT 1 BAL)				
* CN504	1-566-852-11	CONNECTOR (RECEPTACLE) 3P(INPUT 2 BAL)				
		< DIODE >				
D501	8-719-901-83	DIODE 1SS83				
D502	8-719-901-83	DIODE 1SS83				
D503	8-719-901-83	DIODE 1SS83				
D504	8-719-901-83	DIODE 1SS83				
D505	8-719-901-83	DIODE 1SS83				
D506	8-719-901-83	DIODE 1SS83				
D507	8-719-901-83	DIODE 1SS83				
D508	8-719-901-83	DIODE 1SS83				
		< IC >				
IC501	8-759-602-01	IC M5220P				
IC502	8-759-602-01	IC M5220P				
IC503	8-759-602-01	IC M5220P				
IC504	8-759-602-01	IC M5220P				
		< RESISTOR >				
R501	1-247-887-00	CARBON	220K	5%	1/4W	
R502	1-247-887-00	CARBON	220K	5%	1/4W	
R503	1-247-887-00	CARBON	220K	5%	1/4W	
R504	1-247-887-00	CARBON	220K	5%	1/4W	
R507	1-249-430-11	CARBON	12K	5%	1/4W	
R508	1-249-430-11	CARBON	12K	5%	1/4W	
R509	1-249-420-11	CARBON	1.8K	5%	1/4W	
R510	1-249-420-11	CARBON	1.8K	5%	1/4W	
R511	1-249-420-11	CARBON	1.8K	5%	1/4W	
R512	1-249-420-11	CARBON	1.8K	5%	1/4W	
R513	1-249-405-11	CARBON	100	5%	1/4W	
R514	1-249-405-11	CARBON	100	5%	1/4W	
R515	1-249-405-11	CARBON	100	5%	1/4W	
R516	1-249-405-11	CARBON	100	5%	1/4W	
R517	1-247-895-00	CARBON	470K	5%	1/4W	
R518	1-247-895-00	CARBON	470K	5%	1/4W	
R519	1-247-895-00	CARBON	470K	5%	1/4W	
R520	1-247-895-00	CARBON	470K	5%	1/4W	
R521	1-249-420-11	CARBON	1.8K	5%	1/4W	

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

INPUT(1) INPUT(2) INPUT(3) LED

Ref. No.	Part No.	Description			Remarks
R522	1-249-420-11	CARBON	1.8K	5%	1/4W
R523	1-249-420-11	CARBON	1.8K	5%	1/4W
R524	1-249-420-11	CARBON	1.8K	5%	1/4W
R525	1-249-425-11	CARBON	4.7K	5%	1/4W
R526	1-249-425-11	CARBON	4.7K	5%	1/4W
R527	1-249-425-11	CARBON	4.7K	5%	1/4W
R528	1-249-425-11	CARBON	4.7K	5%	1/4W
R529	1-249-425-11	CARBON	4.7K	5%	1/4W
R530	1-249-425-11	CARBON	4.7K	5%	1/4W
R531	1-249-425-11	CARBON	4.7K	5%	1/4W
R532	1-249-425-11	CARBON	4.7K	5%	1/4W
R533	1-249-417-11	CARBON	1K	5%	1/4W
R534	1-249-417-11	CARBON	1K	5%	1/4W
		< RELAY >			
RL501	1-515-890-11	RELAY			
**********					
*	1-642-604-11	PC BOARD, INPUT 2			
		**********			
		< JACK >			
JK502	1-691-945-11	JACK 2P (INPUT 1 UNBAL)			
		< RESISTOR >			
R506	1-247-887-00	CARBON	220K	5%	1/4W
		< SWITCH >			
SW502	1-692-127-11	SWITCH, SLIDE (INPUT 1 BAL/UNBAL)			
**********					
*	1-642-605-11	PC BOARD, INPUT 3			
		**********			
		< JACK >			
JK501	1-691-945-11	JACK 2P (INPUT 2 UNBAL)			
		< RESISTOR >			
R505	1-247-887-00	CARBON	220K	5%	1/4W
		< SWITCH >			
SW501	1-692-127-11	SWITCH, SLIDE (INPUT 2 BAL/UNBAL)			
SW503	1-692-129-11	SWITCH, SLIDE (OPERATION)			
**********					

Ref. No.	Part No.	Description			Remarks
*	1-642-606-11	PC BOARD, LED			
		**********			
		< CAPACITOR >			
C403	1-124-907-11	ELECT	10uF	20%	50V
C404	1-124-907-11	ELECT	10uF	20%	50V
C405	1-126-101-11	ELECT	100uF	20%	16V
		< LED >			
D411	8-719-312-20	LED SEL3410G (GRN) (CH1 OPERATION)			
D412	8-719-312-20	LED SEL3410G (GRN) (CH2 OPERATION)			
D413	8-719-812-31	LED TLR123 (RED) (CH1 CRIP)			
D414	8-719-812-31	LED TLR123 (RED) (CH2 CRIP)			
D415	8-719-812-31	LED TLR123 (RED) (CH1 HIGH TEMP)			
D416	8-719-812-31	LED TLR123 (RED) (CH2 HIGH TEMP)			
D417	8-719-812-31	LED TLR123 (RED) (CH1 PROTECTION)			
D418	8-719-812-31	LED TLR123 (RED) (CH2 PROTECTION)			
D419	8-719-918-96	LED AA3422S (ORG) (CH1 0.9W -21dB)			
D420	8-719-918-96	LED AA3422S (ORG) (CH2 0.9W -21dB)			
D421	8-719-918-96	LED AA3422S (ORG) (CH1 1.7W -18dB)			
D422	8-719-918-96	LED AA3422S (ORG) (CH2 1.7W -18dB)			
D423	8-719-918-96	LED AA3422S (ORG) (CH1 3.4W -15dB)			
D424	8-719-918-96	LED AA3422S (ORG) (CH2 3.4W -15dB)			
D425	8-719-918-96	LED AA3422S (ORG) (CH1 6.8W -12dB)			
D426	8-719-918-96	LED AA3422S (ORG) (CH2 6.8W -12dB)			
D427	8-719-918-96	LED AA3422S (ORG) (CH1 12.5W -9dB)			
D428	8-719-918-96	LED AA3422S (ORG) (CH2 12.5W -9dB)			
D429	8-719-918-96	LED AA3422S (ORG) (CH1 25W -6dB)			
D430	8-719-918-96	LED AA3422S (ORG) (CH2 25W -6dB)			
D431	8-719-918-96	LED AA3422S (ORG) (CH1 50W -3dB)			
D432	8-719-918-96	LED AA3422S (ORG) (CH2 50W -3dB)			
D433	8-719-918-96	LED AA3422S (ORG) (CH1 100W 0dB)			
D434	8-719-918-96	LED AA3422S (ORG) (CH2 100W 0dB)			
D435	8-719-918-96	LED AA3422S (ORG) (CH1 200W +3dB)			
D436	8-719-918-96	LED AA3422S (ORG) (CH2 200W +3dB)			
D437	8-719-812-31	LED TLR123 (RED) (CH1 400W +6dB)			
D438	8-719-812-31	LED TLR123 (RED) (CH2 400W +6dB)			
D439	8-719-312-20	LED SEL3410G (GRN) (POWER ON)			
		< IC >			
IC401	8-759-087-35	IC BA683A			
IC402	8-759-087-35	IC BA683A			
		< RESISTOR >			
R741	1-249-425-11	CARBON	4.7K	5%	1/4W
R442	1-249-425-11	CARBON	4.7K	5%	1/4W

When indicating parts by reference number, please include the board.

LED | POWER SUPPLY | VR-1 | VR-2 | THERMAL PROTECTOR 1 | THERMAL PROTECTOR 2

Ref.No.	Part No.	Description				Remarks
R445	1-249-428-11	CARBON	8.2K	5%	1/4W	
R446	1-249-428-11	CARBON	8.2K	5%	1/4W	
R447	1-249-441-11	CARBON	100K	5%	1/4W	
R448	1-249-441-11	CARBON	100K	5%	1/4W	
R449	1-249-429-11	CARBON	10K	5%	1/4W	
R450	1-249-429-11	CARBON	10K	5%	1/4W	
R451	1-249-421-11	CARBON	2.2K	5%	1/4W	
**********						
*	1-642-575-11	PC BOARD, POWER SUPPLY				
		**********				
		< CAPACITOR >				
C801	1-124-922-11	ELECT	1000uF	20%	63V	
C802	1-124-907-11	ELECT	10uF	20%	50V	
C803	1-124-907-11	ELECT	10uF	20%	50V	
C805	1-124-443-00	ELECT	100uF	20%	6.3V	
		< DIODE >				
D805	8-719-970-02	DIODE	1SR139-400			
D806	8-719-970-02	DIODE	1SR139-400			
D807	8-719-901-83	DIODE	1SS83			
		< FUSE >				
⚠F801	1-532-360-XX	FUSE, GLASS TUBE(100V 1A)				
*	1-533-185-11	HOLDER, FUSE				
⚠F802	1-532-360-XX	FUSE, GLASS TUBE(100V 1A)				
*	1-533-185-11	HOLDER, FUSE				
		< IC >				
IC801	8-759-701-83	IC	NJM7824FA			
IC802	8-759-982-13	IC	RC7812FA			
		< TRANSISTOR >				
Q805	8-729-900-36	TRANSISTOR	DTC124ES			
		< RESISTOR >				
⚠R813	1-219-211-11	FUSIBLE(TEMPERATURE, 130°C)	1	10%	2.40W	
⚠R814	1-217-160-00	RES, METAL PLATE	1.0		5W	
⚠R815	1-217-160-00	RES, METAL PLATE	1.0		5W	
⚠R816	1-217-160-00	RES, METAL PLATE	1.0		5W	
⚠R817	1-217-160-00	RES, METAL PLATE	1.0		5W	
R823	1-249-431-11	CARBON	15K	5%	1/4W	
R824	1-249-431-11	CARBON	15K	5%	1/4W	
R825	1-249-441-11	CARBON	100K	5%	1/4W	
		< RELAY >				
⚠RL801	1-515-891-11	RELAY				
**********						

Ref.No.	Part No.	Description				Remarks
*	1-642-602-11	PC BOARD, VR-1				
		**********				
		< VARIABLE RESISTOR >				
VR502	1-241-910-11	VARIABLE RESISTOR 10KA (CH1 ATTENUATOR)				
**********						
*	1-642-601-11	PC BOARD, VR-2				
		**********				
		< VARIABLE RESISTOR >				
VR501	1-241-910-11	VARIABLE RESISTOR 10KA (CH2 ATTENUATOR)				
**********						
*	1-646-271-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 1				
		**********				
		< THERMISTOR >				
TH603	1-880-427-00	POSISTOR(THERMAL PROTECT)				
**********						
*	1-646-272-11	(MU-A400)..PC BOARD, THERMAL PROTECTOR 2				
		**********				
		< THERMISTOR >				
TH604	1-800-427-00	POSISTOR(THERMAL PROTECT)				
**********						
		MISCELLANEOUS				
		**********				
203	1-533-210-11	HOLDER, FUSE				
C851	1-125-424-11	(MU-A400)..				
		ELECT	18000uF	20%	100V	
C851	1-125-425-11	(MU-A200)..				
		ELECT	18000uF	20%	71V	
C852	1-125-424-11	(MU-A400)..				
		ELECT	18000uF	20%	100V	
C852	1-125-424-11	(MU-A200)..				
		ELECT	18000uF	20%	71V	
⚠*CNJ851	1-580-375-21	INLET 3P (~ AC IN)				
D851	8-719-029-99	DIODE	GBPC2504			
D852	8-719-029-99	DIODE	GBPC2504			
EF851	1-541-974-11	FAN, ELECTRIC				
EF852	1-541-974-11	FAN, ELECTRIC				
⚠F851	1-576-258-00	(MU-A400)..FUSE, GLASS TUBE(250V 8A)				
⚠F851	1-532-350-00	(MU-A200)..FUSE, TIME-LAG (GLASSS TUBE) (250V 4A)				
⚠S851	1-571-649-11	SWITCH, PUSH (AC POWER)				
⚠T801	1-450-904-11	(MU-A200)..TRANSFORMER, POWER				
⚠T801	1-450-906-11	(MU-A400)..TRANSFORMER, POWER				

When indicating parts by reference number, please include the board.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
* TM801	1-537-125-11	TERMINAL BOARD	
TM851	1-536-961-11	TERMINAL(5-WAY)(OUTPUT 1)	
TM852	1-536-961-11	TERMINAL(5-WAY)(OUTPUT 2)	

****

ACCESSORIES & PACKING MATERIAL
****

⚠*	1-559-656-11	CORD, POWER	
	2-338-218-12	MANUAL, INSTRUCTION(ENGLISH, FRENCH, GERMAN)	
*	3-704-300-01	BAG(STANDARD), PROTECTION	
⚠	1-576-258-00	(MU-A400)..FUSE, GLASS TUBE(250V 8A)	
⚠	1-532-350-00	(MU-A200)..FUSE, TIME-LAG (GLASS TUBE) (250V 4A)	

****

****
HARDWARE LIST
****

#1	7-621-773-95	SCREW +B 2.6X6 (BLK)
#2	7-682-247-04	SCREW +K 3X6
#3	7-682-548-09	SCREW +B 3X8 (BLK)
#4	7-682-549-09	SCREW +B 3X10 (BLK)
#5	7-682-561-04	SCREW +B 4X8
#6	7-682-561-09	SCREW +B 4X8 (BLK)
#7	7-682-565-09	SCREW +B 4X16 (BLK)
#8	7-682-568-09	SCREW +B 4X30 (BLK)
#9	7-682-576-04	(MU-A400)..SCREW +B 5X12
#9	7-682-562-04	(MU-A200)..SCREW +B 4X10
#10	7-682-950-01	SCREW +PSW 3X12
#11	7-685-246-14	SCREW +KTP 3X8, TYPE 2 NON-SLIT
#12	7-685-645-79	SCREW +BVTP 3X6, TYPE 2, IT-3 (BLK)
#13	7-685-646-79	SCREW +BVTP 3X8, TYPE 2, IT-3 (BLK)
#14	7-685-648-79	SCREW +BVTP 3X12, TYPE 2, IT-3 (BLK)
#15	7-685-663-79	SCREW +BVTP 4X16, TYPE 2, IT-3 (BLK)
#16	7-685-903-11	SCREW +PTPWH 3X6 (TYPE 2)
#17	7-682-248-04	(MU-A200)..SCREW +K 3X8
#17	7-685-246-14	(MU-A400)..SCREW +KTP 3X8, TYPE 2 NON-SLIT
#21	7-623-212-22	SW5, TYPE 2
#22	7-623-422-07	LW3, TYPE B
#23	7-684-024-03	N4, TYPE 2
#24	7-684-023-04	(MU-A200)..N3, TYPE 2

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Sony Sound Tec Corporation

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